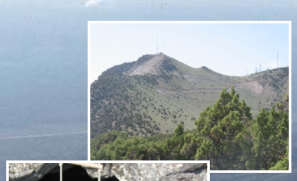
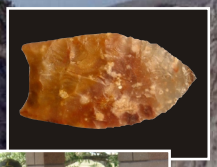
DOE/ID-10997
Revision 1
September 2005

U.S. Department of Energy
Idaho Operations Office

Idaho National Laboratory
Cultural Resource Management Plan







Idaho National Laboratory

G1287-06

DOE/ID-10997
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September 2005

Prepared for the
U.S. Department of Energy
Idaho Operations Office

ABSTRACT

As a federal agency, the U.S. Department of Energy has been directed by Congress, the U.S. president, and the American public to provide leadership in the preservation of prehistoric, historic, and other cultural resources on the lands it administers. This mandate to preserve cultural resources in a spirit of stewardship for the future is outlined in various federal preservation laws, regulations, and guidelines such as the National Historic Preservation Act, the Archaeological Resources Protection Act, and the National Environmental Policy Act. The purpose of this Cultural Resource Management Plan is to describe how the Department of Energy, Idaho Operations Office will meet these responsibilities at the Idaho National Laboratory.

This Laboratory, which is located in southeastern Idaho, is home to a wide variety of important cultural resources representing at least 12,000 years of human occupation in the southeastern Idaho area. These resources are nonrenewable; bear valuable physical and intangible legacies; and yield important information about the past, present, and perhaps the future. There are special challenges associated with balancing the preservation of these sites with the management and ongoing operation of an active scientific laboratory. The Department of Energy, Idaho Operations Office is committed to a cultural resource management program that accepts these challenges in a manner reflecting both the spirit and intent of the legislative mandates.

This document is designed for multiple uses and is intended to be flexible and responsive to future changes in law or mission. Document flexibility and responsiveness will be assured through annual reviews and as-needed updates. Document content includes summaries of Laboratory cultural resource philosophy and overall Department of Energy policy; brief contextual overviews of Laboratory missions, environment, and cultural history; and an overview of cultural resource management practices. A series of appendices provides important details that support the main text.

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ACRONYMS

ACRONYMS, ABBREVIATIONS, AND SYMBOLS

The acronyms, abbreviations, initialisms, and symbols contained in the following list include those used to denote terms in both the body of this document and the appendices, with the exception of form examples (e.g., Figure 31) where both the acronym and full term are provided. Symbols are provided at the end of this list.

A1W	large ship reactor (A for aircraft carrier, 1 for first model, and W for the designer, Westinghouse)
A&M	Assembly and Maintenance building (TAN-607)
ACETS	Advanced Combined Environments Test Station
ACHP	Advisory Council on Historic Preservation
ACRS	Advisory Committee on Reactor Safeguards
A.D.	anno Domini (in the year of the Lord)
Admin	administration (administrative)
AEC	Atomic Energy Commission (also "USAEC," DOE predecessor)
AEF	Argonne Experimental Facility
AFSR	Argonne Fast Source Reactor
AIP	agreement in principle
AIRFA	American Indian Religious Freedom Act
ALARA	as low as reasonably achievable
ALPR	Argonne Low Power Reactor
AMWTP	Advanced Mixed Waste Treatment Project
ANCR	Aerojet Nuclear Company Report (technical report designation)
ANL	Argonne National Laboratory
ANL-W	Argonne National Laboratory-West (now MFC)
ANLW	Argonne National Laboratory-West (archaeological field or project designator)
ANP	Aircraft Nuclear Propulsion
ANPP	Aircraft Nuclear Propulsion Program
anti-C	anti-contamination (protective clothing)

APEX	Atomic Products Division of General Electric (technical report designation)
APMP	Architectural Properties Management Plan
ARA	Army Reactor Area (renamed the Auxiliary Reactor Area)
ARPA	Archaeological Resource Protection Act of 1979
ARVFS	Advanced Reentry Vehicle Fuzing System
ATR	Advanced Test Reactor
B	building (designator)
BBWI	Bechtel BWXT Idaho, LLC (AMWTP contractor and former INEEL contractor)
BCP	Baseline Change Proposal
BEA	Battelle Energy Alliance, LLC (INL contractor)
BIA	Bureau of Indian Affairs
bldg.	building
BLM	Bureau of Land Management
BLR	Big Lost River
Blvd.	boulevard
BM	Bingham county
BORAX	Boiling-Water Reactor Experiment
B.P.	before present (i.e., before 1950 A.D.)
BRX	Boiling-Water Reactor Experiment (archaeological field designator)
BT	Butte county
BV	Bonneville county
BWP	Buried Waste Program
BWXT	BWX Technologies, Inc.
C	Celsius
C1W	cruiser ship reactor (C for cruiser, 1 for first model, and W for the designer, Westinghouse)
ca.	circa, in approximately, around (abbreviation for Latin “circum”)

CAB	Citizens Advisory Board
CCD	Corrosive Chemical Disposal Area
CDC	Capsule Driver Core
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERT	Controlled Environmental Radioiodine Tests
cf.	compare (Latin abbreviation for "conferre")
CF	Central Facilities Area building designation
CFA	Central Facilities Area
CFLUP	Comprehensive Facility and Land Use Plan (INL)
CFR	*Code of Federal Regulations*
CFRD	corporate funded research and development
CITRC	Critical Infrastructure Test Range Complex (formerly PBF)
cm	centimeter
Co.	Company
COM	communication
CP-1	Chicago Pile #1
CPP	Chemical Processing Plant (used primarily as an SSC designation)
Cr.	creek
CRBR	Clinch River Breeder Reactor
CRCE	Cavity Reactor Critical Experiment
CRM	cultural resource management (also "Cultural Resource Management," e.g., INL CRM Office)
CRMO	Cultural Resource Management Office (also "CRM Office")
CRMP	Cultural Resource Management Plan
CRWG	Cultural Resources Working Group
CWI	CH2M♦WG Idaho, LLC (ICP contractor)

D_2O	deuterium oxide (also “heavy water,” two parts deuterium and one part oxygen)
D&D	decontamination and dismantlement
D&D	decontamination and demolition
DC	Defense Communication (technical report designation)
D.C.	District of Columbia
DCS	distributed control system
DD&D	deactivation, decontamination, and demolition
DEQ	Idaho Department of Environmental Quality
DEW	Defense Early Warning (later the Ballistic Missile Early Warning System)
DOD	Department of Defense
DOE	Department of Energy
DOE-HQ	Department of Energy, Headquarters
DOE-ID	Department of Energy, Idaho Operations Office
DOE/ID	Department of Energy, Idaho Operations Office (technical report designation)
E	east
E-85	mixture of 85% ethanol and 15% gasoline based on volume
EA	environmental assessment
EBOR	Experimental Beryllium Oxide Reactor
EBR-I	Experimental Breeder Reactor (e.g., EBR-I)
EBWR	Experimental Boiling Water Reactor
EC	environmental checklist
ECCS	Emergency Core Cooling System
ECF	Expended Core Facility
ECW	ECW Press (Essays on Canadian Writing, et seq.)
ed.	edition
EFS	Experimental Field Station

e.g.	for example (Latin abbreviation for “exempli gratia”)
EG&G	EG&G Technical Services, Inc. (originally Edgerton, Germeshausen, and Grier, Inc.)
EH	Environmental, Safety, and Health (DOE-HQ division)
EIS	environmental impact statement
EM	Environmental Management Office of the Department of Energy
e-mail	electronic mail (also “E-mail”)
EO	Executive Order
EOCR	Experimental Organic Cooled Reactor
EPA	Environmental Protection Agency
ER	environmental restoration
ERDA	Energy Research and Development Administration (DOE predecessor)
ESRF	Environmental Sciences and Research Foundation
et al.	and others (abbreviation for Latin feminine plural “et aliae,” masculine plural “et alil,” or neutral plural “et alia”)
etc.	and so forth (abbreviation for Latin “et cetera”)
ETR	Engineering Test Reactor
ETRC	Engineering Test Reactor Critical Facility
et seq.	and those that follow (abbreviation for Latin “et sequens”)
EXT	external (INL technical report designation)
FAA	Federal Aviation Administration
FAST	Fluorinel Dissolution Process and Fuel Storage (project and facility, CPP-666)
FAV	Fast Attack Vehicle (canceled project)
Fax	facsimile
FCF	Fuel Cycle Facility (renamed “Fuel Conditioning Facility”)
FDP	Fluorinel Dissolution Process
FET	Field Engineering Test (LOFT facility, formerly FETF)

FETF	Flight Engine Test Facility (now FET)
FFA/CO	Federal Facility Agreement and Consent Order
FONSI	finding of no significant impact
FPR	fuel processing restoration
FRAN	Fast Burst Reactor (nuclear effects reactor)
FS&R	Filling, Storage, and Remelt System
ft	feet (foot; also " ' ")
FY	fiscal year
GCRE	Gas-Cooled Reactor Experiment
GE	General Electric Company
GIS	geographical information system
Govt	government
GPS	Global Positioning System
H_2O	water (two parts hydrogen and one part oxygen)
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HAPMP	INEEL Historic Architectural Properties Management Plan for U.S. Department of Energy, Idaho Operations Office (INEEL/EXT-02-1338)
HBIS	Historic Building Inventory Survey
HEPA	high efficiency particulate air
HETO	Heritage Tribal Office (formerly Tribal CRM Office)
HFEF	Hot Fuel Examination Facility
HIST	history (archaeological project designator)
HPIL	Health Physics Instrument Laboratory
HPTF	Howe Peak Transmitter Facility
HTGR	High Temperature Gas Cooled Reactor

HTRE	Heat Transfer Reactor Experiments
I-131	iodine-131
I.C.	Idaho Code
ICDF	Idaho CERCLA Disposal Facility
ICP	Idaho Cleanup Project
ICPP	Idaho Chemical Processing Plant (also "Chem Plant," now INTEC)
ID	Idaho
ID	Idaho Operations Office (DOE)
IDO	Idaho Operations Office reports (issued by DOE and its predecessors for DOE Technical Information Division distribution)
IDT	Idaho Department of Transportation
i.e.	that is (abbreviation for Latin "id est")
IEDF	INEEL Engineering Demonstration Facility
IEEE	Institute of Electrical and Electronics Engineers
IET	Initial Engine Test
IF	Idaho Falls, Idaho
IFR	Integral Fast Reactor
IHS	Idaho Historical Society
IHSI	Idaho Historical Sites inventory
ILTSF	Intermediate Level Transuranic Storage Facility
IMACS	Intermountain Antiquities Computer System
in.	inch
Ind.	individual
Inc.	Incorporated
INEC	Idaho Nuclear Energy Commission
INEEL	Idaho National Engineering and Environmental Laboratory (now INL)
INEL	Idaho National Engineering Laboratory (now INL)

INL	Idaho National Laboratory (formerly NRTS, INEL, and then INEEL)
INTEC	Idaho Nuclear Technology and Engineering Center (formerly ICPP)
IRC	Idaho Research Center
ISF	Intermediate-Scale Facility (waste disposal demonstration site)
ISFF	Idaho Spent Fuel Facility
ISM	Integrated Safety Management
ISU	Idaho State University
ITDF	Idaho Transportation Department facility
IWPF	Idaho Waste Processing Facility (PREPP-II)
JCAE	Joint Committee on Atomic Energy, U.S. Congress (now dissolved)
JF	Jefferson county
JFK	John Fitzgerald Kennedy (thirty-fifth president of the United States, 1961 to 1963).
km	kilometer
kV	kilovolt
L	series designator for nonnuclear, large-break, loss-of-coolant accident teaching reactors
LAN	local area network
LCCDA	Liquid Corrosive Chemical Disposal Area
LCRE	Lithium Cooled Reactor
LDRD	laboratory-directed research and development
LESAT	Lockheed Environmental Systems and Technologies Company
LITCO	Lockheed Idaho Technologies Company (contractual company name of LMITCO)
LLC	Limited Liability Company
LLMWPF	Low Level Mixed Waste Processing Facility
LMFBR	Liquid Metal Fast Breeder Reactor
LMIT	Lockheed Martin Idaho Technologies Company (abbreviated form of LMITCO used primarily as a document or activity designator)
LMITCO	Lockheed Martin Idaho Technologies Company (former INL M&O contractor)
LOFT	Loss of Fluid Test
LPTF	Low Power Test Facility
LT	long-term

m	meter
M&O	management and operating (contractor)
MCP	management control procedure (INL document type designator)
MDA	mass detonation area
Met Lab	Metallurgical Laboratory
MFC	Materials and Fuels Complex (formerly ANL-W)
mi	mile
Mil.	military
Misc.	miscellaneous
MIT	Massachusetts Institute of Technology
MK	Morrison Knudsen Corporation (now Washington Group International, Inc.)
ML	Mobile Low-Power reactor (e.g., ML-1)
MOA	memorandum of agreement
MOU	memorandum of understanding
MTA	Mobile Test Assembly
MTR	Materials Test Reactor
MWSF	Mixed Waste Storage Facility
N	north
NA	not applicable
NAGPRA	Native American Graves Protection and Repatriation Act
NaK	sodium-potassium alloy, used as a reactor coolant
NASA	National Aeronautics and Space Administration
n.d.	no date
NDGPS	National Defense Global Positioning System
NE	Nuclear Energy, Science, and Technology Office of the Department of Energy
NEA	Nuclear Energy Agency
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act

NIQI	Northern Intermountain Quaternary Institute
NIOSH	National Institute of Occupational Safety and Health
No.	number (also "#")
NOAA	National Oceanic and Atmospheric Administration
NODA	Naval Ordinance Disposal Area
Nos.	numbers
NOTF	Naval Ordinance Test Facility
NOX	mixed oxides of nitrogen (NO, NO_2, N_2O)
n.p.	no publisher
NPG	Naval Proving Grounds
NPR	New Production Reactor
NPS	National Park Service
NRB	National Register bulletin
NRC	Nuclear Regulatory Commission
NRF	Naval Reactors Facility
NRHP	National Register of Historic Places
NRT	Nuclear Reactor Testing
NRTS	National Reactor Testing Station (now INL)
NuPac	Nuclear Pacific (manufacture of casks)
NW	northwest
NWCF	New Waste Calcining Facility
OCVZ	organic contamination in the vadose zone
OECD	Organization for Economic Cooperation and Development
OMRE	Organic Moderated Reactor Experiment
Ord	ordnance
ORNL	Oak Ridge National Laboratory
OU	operable unit
p.	page
P	policy (DOE)

PA	programmatic agreement
P&W	Pratt and Whitney Aircraft Division (United Aircraft Corporation)
PBF	Power Burst Facility (now CITRC)
PCB	polychlorinated biphenyl
PDD	program description document
PEW	process equipment waste
Ph.D.	Doctor of Philosophy
PIP	program improvement plan
PL	Portable Low-Power reactor (e.g., PL-3)
PL	Public Law
PM	Portable Medium Power Nuclear Power Plant (e.g., PM-2A)
PNDR	Partnership in Natural Disaster Reduction (replaces ACETS)
POL	policy (INL document type designator)
pp.	pages
PPCo	Phillips Petroleum Company
PREPP	Process Experimental Pilot Plant
Prog	program
PS	policies and standards of performance
PTI	Protective Technologies Idaho
PTR	Phillips Technical Report (PPCo internal report)
PUREX	Plutonium and Uranium Extraction
PWT	portable water treatment
Quad.	quadrant
R	range
R.	river
R-2	Swedish test reactor designation
RadCon	Radiological Control
RAL	Remote Analytical Laboratory (CPP-684)
RCRA	Resource Conservation and Recovery Act

Ref.	reference
RESL	Radiological and Environmental Sciences Laboratory
Rev.	revision
RMF	Reactivity Measurement Facility
ROB	Research Office Building (at IRC)
ROW	right of way
RSTA	Reactives Storage and Treatment Area
RTC	Reactor Technology Complex (formerly TRA)
RWMC	Radioactive Waste Management Complex
S1W	Submarine Thermal Reactor (also "STR"; S for submarine, 1 for first model, and W for the designer, Westinghouse)
S5G	Submarine Reactor (high-speed submarine; S for submarine, 5 for fifth model, and G for the designer, General Electric)
SA	spreading area
SAB	spreading area B
SAIC	Science Application International Corporation (involved in radioactive waste technology)
SARA	Superfund Amendments and Reauthorization Act
SAREF	Safety Research Facility
SAT	Save America's Treasures
SCADA	Supervisory Control and Data Acquisition (INL electrical power consumption computerized system)
SCIE	Scientech, Inc.
SDA	Subsurface Disposal Area
SE	southeast
Sec	section
Sept.	September
SERDP	Strategic Environmental Research and Development Program
Sho-Ban	Shoshone-Bannock Tribes
SHPO	State Historic Preservation Office
SIS	Special Isotope Separation
SJM	Susanne J. Miller (subcontracted researcher)

SL	Stationary Low Power reactor (e.g., SL-1)
SM	Stationary Medium Power reactor (e.g., SM-1)
SMC	Specific Manufacturing Capability
SNAP	Systems for Nuclear Auxiliary Power
SNF	spent nuclear fuel
SNM	special nuclear material
SNTP	Space Nuclear Test Program
SPERT	Special Power Excursion Reactor Test
sq.	square (also "^{2}")
SSC	structure, system, or component
SSC	Super Conducting Supercollider (canceled project)
SSSTF	Staging, Storage, Sizing, and Treatment Facility
STAR	Safety and Tritium Applied Research Facility (TRA-666)
Stat.	statute
STD	standard (INL document type designator)
STEP	Safety Test Engineering Program
STF	Security Training Facility (former EOCR reactor building)
STGWG	State and Tribal Government Working Group
STR	Submarine Thermal Reactor
SUSIE	Shield Test Pool Facility
SW	southwest
SWEPP	Stored Waste Examination Pilot Plant
SWPP	service waste percolation pond
T	township
T	trailer or temporary structure (designator)
TAN	Test Area North
TB	temporary building (designator)
Temp.	temporary
TERO	Tribal Employment Rights Ordinance

TETF	Totally Enclosed Treatment Facility
THPO	Tribal Historic Preservation Office
THRITS	Thermal Reactor Idaho Test Station
TMI	Three Mile Island
TNT	trinitrotoluene
TRA	Test Reactor Area (now RTC)
TRANSCOM	Transportation Communication
TREAT	Transient Reactor Test Facility
TRL	Tritium Research Laboratory
TRU	transuranic (an element with an atomic number greater than 92, the atomic number of uranium)
TRUPACT	transuranic waste package containers
TSA	Transuranic Storage Area
TSF	Technical Support Facility
TST	test (archeological field project designator)
U-235	uranium-235
UAV	unmanned aerial vehicle
UCNI	unclassified controlled nuclear information
UGV	unmanned ground vehicle
UK	unknown
U of I	University of Idaho
UREP	Utilities Replacement Expansion (also “Enhancement”) Project
U.S.	United States
USA	United States of America
USAEC	U.S. Atomic Energy Commission (also “AEC,” DOE predecessor)
USC	United States Code (also “U.S.C.”)
U.S.C.	United States Code (also “USC”)
USDOE	U.S. Department of Energy (also “DOE”)
USFS	U.S. Forest Service
USGPO	U.S. Government Printing Office

USGS	United States Geological Survey (also “U.S.G.S.”)
U.S.G.S.	United States Geological Survey (also “USGS”)
USS	United States Ship
UTM	universal transverse mercator (map measurement)
v.	against (abbreviation for Latin “versus”)
VCO	Voluntary Consent Order
VIS	misnomer for “InelViz” (software developed for INL to display meteorological data and plume dispersion modeling data)
VMF	Vehicle Monitoring Facility
VVE	Vapor Vacuum Extraction
W	west
WAG	waste area group
WCF	Waste Calcining Facility
WEDF	Waste Engineering Development Facility
WERF	Waste Experimental Reduction Facility (now WROC)
WINCO	Westinghouse Idaho Nuclear Company, Inc. (former ICPP M&O contractor)
WIPP	Waste Isolation Pilot Plant (DOE facility in New Mexico)
WM	waste management
WMC	Waste Management Complex (building designation)
WMF	Waste Management Facility (building designation)
WMO	Waste Management Office
WOW	Woman Ordnance Worker
WRC	Weapons Range Complex
WROC	Waste Reduction Operations Complex (formerly WERF)
WRRTF	Water Reactor Research Test Facility
WTB	Wireless Test Bed
WW2	World War II
YDB	yard B, west side of CPP-601
ZPPR	Zero Power Plutonium Reactor
ZPR	Zero Power Reactor

&	and
x	by
^{0}	degrees (temperature)
>	greater than
’	feet (foot; also “ft”)
<	less than
≤	less than or equal to
#	number (also “No.”)
%	percent
+	plus
^{2}	square (squared, also “sq.”)

GLOSSARY

GLOSSARY

The terms defined in this glossary fall under one of two general categories: (1) terms that are sufficiently technical in nature as to merit clarification; (2) commonly used terms that convey a meaning within this document that differs from or is more specific than that conveyed elsewhere.

abrader. Small, generally flat piece of stone that exhibits linear grooves produced by the repeated rubbing (abrasion) of bone or wood to fashion needles, arrow shafts, perforators, etc.

adaptation. The process of change in response to environmental conditions or other external stimuli.

adverse effect. A type of impact that may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register of Historic Places. This includes any impact that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may also include reasonably foreseeable effects caused by an undertaking that may occur later in time, be farther removed in distance, or be cumulative. Consideration is given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register [36 CFR § 800.5(a)(1); see 36 CFR § 800.5(a)(2) for examples]

Advisory Council on Historic Preservation (ACHP; also referred to as "Advisory Council"). An independent federal agency that advises the U.S. president and U.S. Congress on historic preservation and oversees review under Section 106 of the National Historic Preservation Act (NHPA). The Advisory Council is made up of a 20-member panel of presidential appointees, as well as agency heads, parties named in the NHPA, and a small staff with offices in Washington D.C. and Denver, Colorado. [National Preservation Institute, "Integrating Cultural Resources in NEPA Compliance," September 2003]

aeolian. Pertaining to, caused by, or carried by the wind. Aeolian sediments are those formed as a result of wind.

alluvial. Deposited by flowing water, as in a riverbed, a floodplain, a delta, or a fan.

altithermal. A climatic period corresponding to the Archaic cultural periods from 7500 to 3500 before present (B.P.). The altithermal climate was an extended warming period with apparent long droughts resulting from the shift of major latitudinal wind patterns.

American Indians. Of, or relating to, persons whose ancestors aboriginally occupied the Americas. A tribe, people, or culture indigenous to the Americas (also referred to as Native Americans or Indians).

anthropology. The scientific and humanistic study of human kind's present and past biological, linguistic, social, and cultural variations from an all-encompassing holistic approach, with major subfields of archaeology, physical anthropology, cultural anthropology, and anthropological linguistics.

archaeological context. The physical setting, location, and cultural association of artifacts and features within an archaeological site.

archaeological site. A definable area containing artifacts and/or features representative of human activities preserved in a geological context. Any place or locality where there is evidence of past human **activity.** An archaeological site can be as ephemeral as a surface scatter of flakes covering a few square feet to the remains of an earthlodge village covering several tens of acres. Sites can include, but are not

limited to, stone circles, lithic scatters, rockshelters, quarries, burials, petroglyphs, vision quest structures, conical timbered lodges, buffalo jumps, sheepherding camps, homesteads, and historic trash dumps.

archaeology. The scientific study of the physical evidence of past human societies. Archaeology's initial objective is the construction of descriptive cultural chronology; its intermediate objective is the description of past lifeways; and its ultimate objective involves discovery of the processes that underlie and condition human behavior.

architectural property. Various types of buildings, structures, and objects serving human needs related to the occupation and use of the land. Their function, materials, date, condition, construction methods, and location reflect the historic activities, customs, tastes, and skills of the people who built and used them. On the Idaho National Laboratory, this term generally refers to post-1942 structures, buildings, and objects.

area of potential effect. A geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of any historic properties in the area. [36 CFR § 800.16(d)]

assemblage. A discrete collection of artifacts from a given site, stratum, or area. A group of artifacts related to each other based upon recovery from a common archaeological context.

assessment. Evaluation of a federal project in regard to the effect it may have on cultural resources. Under 36 CFR 800.5, assessment is defined as application of the “Criteria of Effect” (36 CFR 800.9a) in consultation with the State Historic Preservation Office.

artifact. Any object manufactured, used, or modified by humans.

basalt. A dark-colored igneous rock of volcanic origin. Fine-textured varieties were utilized by prehistoric people in stone tool manufacture.

biface. A chipped stone artifact that has been flaked on both sides.

Boreal. Of or pertaining to northern forest areas and tundra of the North Temperate Zone and Arctic region.

cairn. A memorial or landmark consisting of regular or irregular piles of locally available rock. Cairns are used as trail markers or burial markers or to mark offerings, sacred places, or caches.

Cenozoic. The latest of four geologic eras encompassing the last 65 million years.

Clovis point. A fluted lanceolate projectile point often found at mammoth kill sites dated ca. 12,000 to 13,000 B.P. and associated with the Clovis technology, which is among the earliest known in the western hemisphere and marks the earliest known human occupation of the INL landscape.

Cody complex. Late Paleo-Indian cultural complex dating approximately 7000 B.C. characterized by parallel-flaked lanceolate projectile points and tanged, asymmetric Cody knives.

complex. A term used to integrate a number of traits or items that are known to be associated with one another. A temporal continuity represented by persistent configurations in single technologies or other systems of related forms.

compliance. Adherence to specific provisions of any law, executive order, regulation, authorization, or similar legal instrument. In cultural resource management, compliance is most commonly used to mean documented observance of the regulated procedural requirements of the National Historic Preservation Act, although the word is generally not favored by the Advisory Council due to its connotations of resistance and coercion. [Bureau of Land Management Cultural Resource Management Manual, 8100, 1988]

conservation. The protection, preservation, data recovery, and management actions directed toward cultural resources. The term is based on the premise that cultural resources are nonrenewable and emphasizes use and taking action.

consultation. The process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process. [36 CFR § 800.16(f)]

consulting parties. Persons or groups the federal agency consults with during the National Historic Preservation Act Section 106 process. They may include the State Historic Preservation Office; the Tribal Historic Preservation Office; American Indian tribes and native Hawaiian organizations; representatives of local governments; applicants for federal assistance, permits, licenses, and other approvals; or any additional consulting parties. [Based on 36 CFR § 800.2(c)]

Additional consulting parties may include individuals and organizations with a demonstrated interest in the undertaking due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking's effects on historic properties. [36 CFR § 800.2(c)(6)]

cultural resources. Unique and nonrenewable evidence of past human activity identifiable through field surveys, historic documentation, or oral evidence. This includes archaeological, historical, and architectural sites, structures, districts, and natural and cultural landscapes with important public or scientific uses or value, as well as objects, locations, and landscapes of importance to a culture or community for traditional, religious, or other cultural reasons.

culture. The integrated system of learned behavior patterns that are characteristic of the members of a society and not the result of biological inheritance.

debitage. Lithic waste material (i.e., flakes) resulting from stone tool manufacture and maintenance.

Department of Energy (DOE). Federal agency responsible for overseeing management of the cultural and environmental resources under their purview, such as the Idaho National Laboratory.

determination of eligibility. A decision that a district, site, building, structure, or object meets or does not meet the National Register of Historic Places criteria for evaluation. [36 CFR § 60.3(c)]

diagnostic artifact. An artifact with characteristic traits such that it can be placed in a specified cultural context, time period, and geographic area.

early prehistoric period (also paleo-Indian tradition or period). A period comprising several cultures and complexes that date between 12,500 to 28,000 B.P. and best known for the nomadic hunters of now extinct big game at the close of the Pleistocene or glacial period.

effect. Alteration to the characteristics of a historic property that qualify it for inclusion in or eligibility for inclusion in the National Register of Historic Places. [36 CFR § 800.16(I)]

environmental assessment (EA). A concise public document for which a federal agency is responsible. The EA serves to:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI)
- Aid an agency's compliance with the National Environmental Policy Act (NEPA) when no EIS is necessary
- Facilitate preparation of an EIS when one is necessary.

The EA includes a discussion of the need for the proposed undertaking and alternatives, a discussion of the environmental impacts of the proposed action and alternatives, and a list of agencies and persons consulted. [NEPA; 40 CFR 1508.9]

ethnography. The systematic recording of human cultural systems.

ethnohistoric. Pertaining to data on the geographic distribution, origins, and relations of races or ethnic groups during a particular historic period.

Euro American. European immigrants to the Americas who settled in Idaho in the early to mid 1800s.

evaluation. The process of determining eligibility of a property for listing on the National Register of Historic Places. [Based on criteria set forth in 36 CFR Part 60.4]

fauna. A Latin term that refers to animals.

finding. Factual assessment by a party, usually an agency, that is subject to review by other parties to the National Historic Preservation Act Section 106 process. [Based on ACHP, "Section-by-Section Questions & Answers," www.achp.gov/106q&a.html]

feature. Nonportable evidence of human activities produced by activities such as digging pits for storage, setting posts or foundations for houses, or constructing hearths for cooking. Features are often distinguished by soil discolorations or artifact concentrations.

federal undertaking (see "undertaking"). A broad range of federal activities, including construction, rehabilitation and repair projects, demolition, licensing, permitting, loans, loan guarantees, grants, property transfers, and many other types of federal involvement. Whenever one of these activities affects a historic property, the sponsoring agency is obligated to seek comments from the Advisory Council on Historic Preservation.

fire hearth. A feature preserved in an archaeological site consisting of the remains of a fireplace. Stone liners and charcoal are commonly found in fire hearths.

floodplain. The portion of a river valley adjacent to the channel, built of sediments deposited by the stream, and covered with water when the river overflows its banks at flood stages.

flora. A Latin term that refers to plants.

flute. A flake scar that runs from the base of a projectile point down the middle portion toward the tip on both sides. It is a characteristic trait of the Clovis and Folsom projectile points.

Folsom point. A spear point characterized by a single, well-made flute on each side and fine pressure flaking. Folsom points were made from about 11,000 to 12,000 B.P. and are generally found in western North America, often in association with extinct bison.

geographic information system (GIS). The computer hardware, software, and procedures designed to support the capture, management, manipulation, analysis, and display of spatial data. GIS is useful in planning and managing problems related to elements on a landscape such as modeling, creating maps, and understanding complex events (e.g., population trends, weather, traffic patterns, location of critical facilities of certain types, and floodplain histories).

Great Basin. The area of internal drainage in the western United States comprising Nevada, eastern California, southeastern Oregon, southern Idaho, and western Utah.

historic architectural property. Any manmade building, structure, or object that is either on or eligible for listing on the National Register of Historic Places.

historic context. An organizing structure for interpreting history and grouping information about historic properties that share a common theme, geographical location, and time period. [National Register bulletin (NRB) 16A, "How to Complete the National Register Registration Form," Appendix IV, p.2]

An important theme, pattern, or trend in the historic development of a locality, state, or the nation at a particular time in history or prehistory. [NRB 30]

historic landmark. Historic properties that possess exceptional value or quality in illustrating or interpreting the heritage of the United States.

historic landscape. A geological area that historically has been used by people or shaped or modified by human activity, occupancy, or intervention; and which possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features. [NRB 30]

historic period. A period described by written documents, such as the period in southeastern Idaho coinciding with the arrival of Lewis and Clark, which represents the beginning of recorded accounts and events in the area (circa 150 B.P. onward).

historic property. Any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places. It includes artifacts, records, and remains that are related to and located within such properties; and properties that are of traditional religious and cultural importance to an American Indian tribe or a native Hawaiian organization and meet National Register criteria. [36 CFR § 800.16(l)]

Any property listed in or eligible for the National Register. The listed properties are of local, regional, and/or nationwide importance. [NHPA, Section 106]

Holocene. An epoch of the Quaternary period from the end of the Pleistocene, approximately 10,000 B.P. to the present time.

ignimbrite. Opaque, glassy volcanic rock favored for prehistoric stone tool manufacture.

incised. A decoration found on pottery and consisting of lines drawn into wet clay. When fired, the arrangement of lines leaves a permanent design on the vessel surface. Also, marks made on bone.

Indian Tribe (see "Tribes"). Legal definition for the governing body and group of people of any American Indian tribe, band, nation, or other group that is recognized as an American Indian tribe by the secretary of the Interior and for which the United States holds land in trust or restricted status for that entity or its members. Such term also includes any native village corporation, regional corporation, and native group established pursuant to the Alaska Native Claims Settlement Act. [43 USC 1601 et seq.]

integrity. The ability of a property to convey its significance through its location, design, setting, materials, workmanship, feeling, and association. [NRB 15, "How to Apply the National Register Criteria of Evaluation," p. 44]

Authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period. [NRB 16A, "How to Complete the National Register Registration Form," Appendix IV, p.2]

inventory. The process and product of locating cultural properties within appropriate contexts and identifying or documenting them sufficiently for National Register eligibility decisions. The inventory process includes archival checks, literature reviews, field surveys, and descriptive documentation.

isolated find. Area of limited human activity, practically defined as an occurrence of less than 10 artifacts.

Keeper of the National Register of Historic Places. The individual delegated the authority by the National Park Service to list properties and formally determine their eligibility for the National Register of Historic Places. [Based on 36 CFR § 60.3(f)]

lacustrine. Pertaining to or produced by a lake or lakes.

Lake Terreton. An extensive shallow inland lake that covered a large portion of the northeastern Snake River Plain during the Pleistocene period.

lanceolate. Lance- or leaf-shaped, referring to projectile points. Most commonly used in reference to chipped stone knives (bifaces) or projectile points that are long, slender, and come to a point at one or both ends.

late prehistoric period. A cultural manifestation dating between 1300 and 150 B.P. on the northeastern Snake River Plain and marked by adoption of the bow and arrow. It is divided into two subperiods; late prehistoric I (1300 to 750 B.P.) and late prehistoric II (750 to 150 B.P.) based on changes in projectile point structure and form. Prehistoric ceramics also emerge as a diagnostic artifact of this period.

lava tube. During basaltic eruptions, fast-moving lava crusts over and forms tunnels filled with fast-moving streams of lava. As an eruption wanes, the lava in these tunnels drains out, leaving empty caves known as lava tubes within the cooled flows.

lifeway. The "what" and "who" of human culture, including settlement pattern, population density, technology, economy, organization of domestic life, kinship, social stratification, ritual, art, and religion.

lithic. Of or relating to stone.

locus. A predicted archaeological site locality.

material culture. All physical items made or modified by human beings.

memorandum of agreement (MOA). A document that records the terms and conditions agreed upon to resolve the adverse effects of an undertaking upon historic properties. [36 CFR § 800.16(o)]

memorandum of understanding (MOU). Similar to a MOA, a document expressing an understanding among parties regarding regulations, actions, relations, etc.

midden. An accumulation of debris by biological agents such as packrats or humans. It may include plant matter, bone, and shell fragments. For prehistoric sites, a layer of soil stained to a dark color by the decomposition of organic refuse such as food bones, fragments of stone tools, charcoal, pieces of pottery, or other discarded materials. For historic sites, a similar layer of soil, but with appropriate historic material remains, often in a much thinner deposit.

middle prehistoric period. A cultural manifestation and ecological adaptive strategy dating between 7500 to 1300 B.P. on the northeastern Snake River Plain. It is divided into three subperiods; early (7500 to 5000 B.P.), middle (5000 to 3500 B.P.), and late (3500 to 1300 B.P.). These subperiods are based on changes in projectile point structure and form. This Archaic lifeway is characterized by a varied resource utilization, including seasonal round adaptations, big and small game hunting, and gathering of vegetal and seed foods.

mitigation. Action that reduces or compensates for the damage caused to historic or prehistoric properties during a federal undertaking. Examples of mitigation include project modification to avoid properties, detailed documentation of properties, relocation of structural properties, and salvage of properties through controlled excavation and data recovery.

National Park Service (NPS). A bureau of the United States Department of the Interior that manages national parks, monuments, and historic sites. The NPS acts as a steward for historic areas in the National Park System, administers preservation programs, maintains the National Register of Historic Places, sets standards for preservation related activities, and provides technical preservation information and guidance.

National Register criteria. The criteria established by the secretary of the Interior for use in evaluating the eligibility of properties for the National Register of Historic Places. [36 CFR § 800.16(r)]

National Register of Historic Places (NRHP; also referred to as "National Register"). A list of formally nominated and recognized properties judged important to national and local history due to their significance to American history, architecture, archaeology, engineering, and culture. The National Register is maintained by the U.S. Department of the Interior, National Park Service. It was created by the NHPA in 1966 and authorized and expanded by 36 CFR 60, which also describes the protocol for nomination to the National Register. 36 CFR 63 provides the procedures for federal agencies and state historic preservation offices to follow when agreement is reached on the eligibility of property to the National Register.

northwestern plains. The area somewhat arbitrarily described as including all of Wyoming, the drainage of the Yellowstone and Madison Rivers up to the Missouri River in northern Montana, western South

Dakota and Nebraska, the southwestern corner of North Dakota, and the area along the northern border of Colorado.

object. A material thing of functional, aesthetic, cultural, historical, or scientific value that may be, by nature or design, movable yet related to a specific setting or environment. [36 CFR § 60.3(j)]

obsidian. Volcanic glass that, because it can be worked to an extremely sharp edge and point, was highly prized for chipped stone implements. Also, because of its reflective qualities when in thin, flat sections, it was used for mirrors.

obsidian hydration. The technique of dating obsidian artifacts by measuring the microscopic amount of water absorbed from the surface into the rock.

oral history. Verbally transmitted information about past events. Although information about unwritten events can be useful, such history is subject to the vagaries of human perceptions and mental recall.

petroglyph. Any form of prehistoric rock art or carvings that are ground, etched, or carved onto a stone surface. Carvings in rock thought to express artistic or religious meaning.

pictograph. A rendering, often painted on the walls of caves or on cliffs, that represents a form of nonverbal communication often employed by prehistoric people. Paintings on rock thought to express artistic or religious meaning.

Pioneer Basin. An area in southeast Idaho that includes the Big Lost River and its small tributaries as they flow across the northeastern Snake River Plain.

Plano. Several lanceolate type projectile points representative of a variety of cultures dating around 10,500 to 7,500 B.P. These cultures were known for big game hunting, and most known sites are associated with extinct bison kills. A variety of Plano-age projectile points have been defined and include Plainview, Scottsbluff, Agate Basin, Hell Gap, Alberta, Eden, and Angostura.

Pleistocene. A geologic epoch, usually thought of as the Ice Age, which began about 1.6 million years ago and ended with the melting of the large continental glaciers, creating the modern climatic pattern about 11,500 years ago.

pluvial. Of or pertaining to rain. Also refers to the wetter periods during a major, extended dry period.

Prehistoric period. The period prior to the historic, before any written languages were present (in Idaho, before 150 B.P.).

preservation. Cultural resource identification, evaluation, recordation, documentation, curation, acquisition, protection, management, rehabilitation, restoration, stabilization, maintenance, research, interpretation, conservation, and education and training. Any combination of the aforementioned activities. [NHPA, Section 301 (8)]

programmatic agreement. A document that records the terms and conditions agreed upon to resolve the potential adverse effects of a federal agency program, complex undertaking, or other situations in accordance with 36 CFR § 800.14(b). [36 CFR § 800.16(t)]

Within the context of this document, a programmatic agreement is a document executed between an agency or facility and advisory groups that may take the place of multiple memoranda of agreement when actions are programmed, repetitive, or perceived to have similar impacts on cultural resources.

projectile point. Any stone, bone, metal, or wood spear point, dart point, or arrow point.

protection (legal definition). The review process of the Advisory Council on Historic Preservation regarding federal undertakings as codified in 36 CFR 800, "Procedures for the Protection of Historic and Cultural Properties." [Wendorf 1978]

protohistoric period. A period represented in the archaeological record that exhibits the arrival of European trade items and influence, yet before the actual arrival of Euro American settlers.

provenience. The location of an artifact or object described in terms of map grids, stratified levels, and/or depth from ground surface. It provides for scientific control of artifacts and associations once the items have been removed from the context of the site. The three-dimensional location of an artifact or feature within an archaeological site, measured by two horizontal dimensions and a vertical elevation.

Quaternary period. The most recent geologic period, dating from approximately two million years ago to the present. The Quaternary subsumes the Pleistocene and Holocene epochs.

radiocarbon analysis (dates, dating). A physiochemical method of estimating the length of time since the death of an organism. A process that provides dates by counting the radioactive decay of carbon in the remains of once-living plants and animals (e.g., charcoal, wood, bone, shell).

reconnaissance. A field survey of a given area designed to locate and record all cultural resources.

riparian. A vegetative zone that parallels a perennial water course.

scraper. A stone implement used to remove fat from the under side of a skin, smooth wood, scrape leather, etc. Different types are described in terms of the shape and/or position of the cutting edge, e.g., side scraper, end scraper, snubnosed scraper, thumbnail scraper, scoop scraper.

seasonal round. Scheduled movement of human groups through various ecozones in the course of a year. Movement carefully planned to coincide with the seasonal availability of specific floral and faunal resources.

Section 106. The section of the National Historic Preservation Act that requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. [NHPA, Section 106; also 36 CFR Part 800, “Protection of Historic Properties”]

Section 110. The section of the National Historic Preservation Act that sets out the broad historic preservation responsibilities of federal agencies and is intended to fully integrate historic preservation into ongoing programs of all federal agencies. [NHPA, Section 110; also introduction to the secretary of the Interior’s “Standards and Guidelines for Federal Agency Historic Preservation Programs”]

sensitivity. A generalized evaluation of the likelihood of encountering cultural resources within a given geographic locale. Areas known to contain high densities of cultural resources are considered to be archaeologically sensitive.

settlement pattern. The distribution of human populations throughout their habitat.

shadscale. Plant community consisting of low shrubs such as bitterbrush and rabbitbrush, usually consistent with high-desert steppe environments.

significance. The importance of a historic property in one or more areas, such as history, architecture, archeology, engineering, or culture. [NRB 16A, "How to Complete the National Register Registration Form," Appendix IV, p. 3; also based on NRB 15, "How to Apply the National Register Criteria for Evaluation," p. 7]

sink (sinks, sink area). Low areas on the northeastern Snake River Plain near the foothills of the Lemhi and Lost River ranges where the Big Lost River, Little Lost River, and Birch Creek cease all overland flow and sink through porous basalt bedrock to the underground Snake River Plain aquifer.

site. The location of a significant event; prehistoric or historic occupation or activity; or building or structure, whether standing, ruined, or vanished. The location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure. [NRB 16A, "How to Complete the National Register Registration Form," Appendix IV, p. 3]

Snake River Plain. Broad curved depression extending more than 500 kilometers across southern Idaho. It is marked by basaltic lava flows, prominent volcanic buttes, alluvial and lacustrine features, and deposits of aeolian silts and sands within a semiarid sagebrush-steppe vegetation community.

stakeholder. Those individuals, groups, host communities, and other entities in the public and private sectors that are interested in or affected by Department of Energy activities and decisions.

State Historic Preservation Office (SHPO). The office designated pursuant to Section 101(b)(l) of the National Historic Preservation Act to administer a state historic preservation program or a representative who acts for the SHPO. [36 CFR § 800.16(v)]

stewardship. To protect and manage property through the philosophy of cultural resource management and law and with the premise that cultural resources are a national heritage. This governmental, corporate, and individual responsibility has been translated into actions where individuals and groups have assumed on-the-ground responsibilities (monitoring, patrolling, rehabilitation, education, and interpretation) for specific prehistoric and historic sites. (For more information on the application of stewardship in cultural resources see Smith and Ehrenhard, 1991.)

strata. The various layers of human or geological origin that comprise archaeological sites.

structure. A construction made for purposes other than creating shelter, such as a bridge. [NRB 16A, "How to Complete the National Register Registration Form," Appendix IV, p. 4]

subsistence. To obtain the food and shelter necessary to support life. A subsistence lifestyle is adapted to the exploitation of different resources in different areas and during different seasons of availability.

surface site. An area in which archaeological remains occur on stable ground surfaces.

territory. The familiar surroundings or home range that is claimed by a group of people.

test excavation. A small-scale, controlled excavation unit placed within an area that is thought to contain buried cultural material. Commonly conducted in 1 x 2 meter units or in 50 x 50 centimeter square-shovel probes within which soil is removed in 10-centimeter levels.

Tribes (see "Indian Tribe"). Those American Indians that are federally recognized as the Shoshone-Bannock Tribes.

typology. The study and systematic classification of types. The study of the differences and similarities exhibited in cultural materials. The ordering of artifacts based on form, function, technology, material, color, shape, or any other qualifiable characteristic(s).

undertaking (see "federal undertaking")**.** A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency. This includes activities carried out by or on behalf of a federal agency; carried out with federal financial assistance; requiring a federal permit, license, or approval; and subject to state or local regulation administered pursuant to a delegation or approval by a federal agency. [36 CFR § 800.16(y)]

United States Department of the Interior. Federal agency whose land managing responsibilities are generally administered through the National Park Service, Bureau of Land Management, and Bureau of Reclamation. The Interior Department has strong cultural resource advisory, regulatory, and preservation responsibilities for all federal lands through its offices of Departmental Consulting Archaeologist and Archaeological Assistance, National Park Service programs, National Register of Historic Places, Historic Preservation Fund, and close working relationship with the Advisory Council on Historic Preservation.

Idaho National Laboratory
Cultural Resource Management Plan

INTRODUCTION

The Department of Energy (DOE) recognizes the importance of cultural resources to its stakeholders and of preserving those resources for present and future generations. DOE is also committed to compliance with legal mandates that require consideration of cultural resources. This section of the Idaho National Laboratory (INL) Cultural Resource Management Plan (CRMP) outlines DOE's commitment and basic philosophy of cultural resource management at INL (see Figure 1).

Figure 1. Panorama of INL high-desert terrain.

Cultural resources at INL include, but are not necessarily limited to, the following broad range of items and locations:

- Archaeological materials and sites that date to the prehistoric, historic, and/or ethnohistoric periods
- Standing structures, buildings, and objects that are over 50 years of age, of exceptional importance, important through their association with momentous events (e.g., Cold War, reactor testing, and World War II), and/or contain significant workmanship and design
- Cultural and natural places, landscapes, select natural resources, and sacred areas or objects that have importance for American Indians and others.

Legal Basis for Cultural Resource Management

As a federal agency, DOE has been directed by the U.S. Congress and the U.S. president to provide leadership in the preservation of prehistoric, historic, and other cultural resources on lands it administers and to manage these resources in a spirit of stewardship for future generations (see Figure 2). The management of INL cultural resources is driven and guided by various federal laws, regulations, executive orders, DOE directives, supplementary State of Idaho statutes and legislation, and INL procedures.

Figure 2. Official seal of the U.S. Department of Energy.

Several laws direct the inventory of cultural resources on federal land, guide the nomination of sites to the National Register of Historic Places, establish mechanisms to protect cultural resources during land-use activities, and levy legal penalties as a consequence for their destruction. Preeminent among these are the National Environmental Policy Act of 1969 (NEPA), the Archaeological Resource Protection Act of 1979 (ARPA), and the National Historic Preservation Act of 1966 (NHPA), as amended, and their implementing regulations.

NEPA outlines the federal policy of general environmental protection by requiring information gathering, planning, and assessment in advance of projects or actions that occur on federal land or are federally licensed or funded. It requires the use of natural and social sciences in planning and decision-making with regard to project impacts on the environment and extends protective provisions to important historic, cultural, and natural aspects of our national heritage. Federal agencies must prepare detailed environmental impact statements (EISs) and environmental assessments (EAs) outlining the scope, environmental impacts of, and alternatives to the action planned and allow for and consider public comments.

ARPA establishes definitions, permit requirements, and criminal and civil penalties, among other provisions, to strengthen the basic tenets of the Antiquities Act of 1906. Felony-level penalties are established for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource located on public or American Indian lands. This act also prohibits the sale, purchase, exchange, transportation, receipt, or offering of any archaeological resource obtained in violation of any provision of the act. Finally, ARPA fosters increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals possessing collections of archaeological resources and data.

NHPA establishes the National Register of Historic Places and defines historic properties as those that meet National Register criteria and are, therefore, eligible for listing on the National Register. Properties that are eligible for listing are afforded the same protection under the law as those that are listed. NHPA Sections 106 and 110 are particularly important for the identification, management, and protection of INL's cultural resources.

The protective provisions of NHPA apply only to those resources that are determined to be eligible or potentially eligible for nomination to the National Register of Historic Places. Many American Indian sacred sites, traditional cultural areas, and sites or features of local interest are not eligible for listing on the National Register, but nonetheless are cultural resources and are no less important to local tribal people and stakeholders. Other laws, such as the NEPA, American Indian Religious Freedom Act, and the American Folklife Preservation Act, recognize their importance and the Department of Energy, Idaho Operations Office (DOE-ID) is committed to their protection at INL. (NHPA provides direction for integrating NEPA and NHPA Section 106 requirements. However, categorical exclusions under NEPA do not apply under NHPA.)

Appendix A provides an annotated list of laws, regulations, policies, Executive Orders, and INL procedures that guide the management of cultural resources at INL. Appendix B includes summaries of the DOE policy and DOE-ID-specific programs and regulatory guidance that illustrate DOE's commitment to protecting American Indian interests. Appendices C and D provide descriptions of how requirements and commitments regarding the protection of cultural resources are implemented at INL.

DOE Cultural Resource Management Philosophy

The INL CRMP was initiated by and reflects the philosophy of DOE-ID, as stated in the following directive:

> "The INEL [Idaho National Engineering Laboratory, now known as the Idaho National Laboratory] possesses a rich and varied prehistory and history. It must be emphasized that cultural resources are limited and non-renewable; that once damaged or destroyed, the information those resources contained is irretrievably lost. Since the INEL has been a federal reservation for over 50 years where public access has been restricted, we are in a unique position to implement management programs which can protect these resources and the information that can be learned from them for the future. As with all other relevant federal regulations, DOE-ID is

committed to rigorous compliance" (DOE-ID 1990).

Indeed, in the years since this 1990 memorandum was issued, DOE-ID has taken many steps to integrate cultural resource management into INL missions and activities. Department of Energy, Headquarters (DOE-HQ) has facilitated this effort through ongoing activities to raise the level of awareness within the entire DOE complex concerning the importance of the agency's cultural resource-related legal responsibilities. These efforts have culminated in the issuance of a formal DOE policy governing cultural resources (U.S. DOE 2001). This policy formalizes DOE's goal to preserve and protect INL cultural resources within a collaborative framework consisting of stakeholders and preservation partners.

Purpose of this Cultural Resource Management Plan

This CRMP outlines the necessary processes and procedures for maintaining INL cultural resources in a spirit of stewardship for future generations and in a manner that is consistent with the intent of executive and legislative mandates. To be useful for this purpose, the CRMP must:

- Respond to existing and changing Executive Orders and federal, state, and DOE requirements for historic preservation
- Outline processes to identify, evaluate the importance of, and take appropriate action for protection of INL cultural resources in accordance with legal requirements, regulations, professional standards, and stakeholder wishes
- Outline a process for communicating and consulting with the Idaho State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (ACHP or Advisory Council), the Shoshone-Bannock Tribes, and other INL stakeholders as mandated by law
- Provide INL employees and decision-makers with guidance on regulatory compliance as it pertains to management of INL cultural resources
- Serve as a tool for managing cultural resources during activities that span from day-to-day work to long-term land use planning
- Serve as a reference tool for individuals with responsibility for INL cultural resources
- Provide an effective balance between DOE's ongoing missions and programs and the preservation and enhancement of cultural resources
- Encourage and enhance educational, interpretive, and research opportunities for DOE-ID-managed cultural resources consistent with DOE management objectives.

Ultimately, this CRMP is intended to meet the following INL cultural resource management objectives:

- Serve as a management commitment by DOE-ID and the INL Cultural Resources Management (CRM) Office
- Streamline the compliance process regarding properties managed by DOE-ID
- Serve as the foundation for a programmatic agreement between DOE-ID, the Idaho SHPO, and the Advisory Council.

The content of this document is responsive to guidance issued by DOE-HQ (DOE 1995), but the overall format closely follows earlier draft INL plans (cf. Miller 1995).

Scope of this Cultural Resource Management Plan

This CRMP encompasses INL properties used to support INL missions as a national laboratory, which are managed under the direction of DOE-ID by management and operating (M&O) contractor Battelle Energy Alliance, LLC (BEA). This CRMP also encompasses those properties used to support the INL environmental cleanup mission, which are managed under the direction of DOE-ID

by Idaho Completion Project (ICP) contractor CH2M♦WG Idaho, LLC (CWI).[1]

Until recently, the cultural resources contained within the administrative boundaries of the Materials and Fuels Complex (MFC), although physically located on INL, did not fall under the purview of this CRMP. MFC, which was called Argonne National Laboratory-West (ANL-W), was operated by the University of Chicago under the direction of DOE's Chicago Operations Office. On November 9, 2004, BEA was awarded the INL M&O prime contract. With the letting of this contract, MFC became an INL facility operated by BEA under the direction of DOE-ID, which places MFC cultural resources under the purview of this CRMP.

The Naval Reactors Facility (NRF), which is managed by DOE-Bettis, is also located at INL and, therefore, described in this CRMP. However, NRF and the cultural resources presently within its administrative boundaries are specifically excluded from management under this CRMP.

Organization of this Cultural Resource Management Plan

The INL CRMP is intended to be a dynamic, flexible document suitable for multiple uses. It is designed to accommodate updates in response to changes in regulations, legislation, DOE mission, or progress in INL cultural resource programs. The main body of this document, which is divided into five sections with supporting subsections, is general in scope and, as a result, somewhat abbreviated.

The section entitled, "Cultural Resources of the Idaho National Laboratory," follows this section. It provides a broad description of the environment, cultural history, and past and present INL missions with special attention to the important cultural resources located at INL.

The next section, entitled, "Idaho National Laboratory Cultural Resource Management," is the "working" portion of the plan where the cultural resource management program is outlined. This section includes, but is not limited to, general descriptions of responsibilities for cultural resource protection and management, compliance strategies, and future goals and objectives. This section is followed by the "Summary" section and "References" section.

Following the "References" section is a series of appendices. Referred to throughout the document, these appendices address specific topics with details and supporting material that enhance the general descriptions contained within the main body of the document. The appendices are designed for separate distribution for clarification or information on specific aspects of INL cultural resource management. The appendices will also be reviewed each year and updated as needed. The following topics are addressed in the appendices:

- Appendix A—Annotated summary of the statutory and regulatory basis for cultural resource management, including sections on DOE and INL policies and requirements
- Appendix B—Summary of American Indian interests, including sections on DOE policy and DOE-ID-specific programs and regulatory guidance
- Appendix C—Strategies and procedures for the management of archeological resources
- Appendix D—Strategies and procedures for the management of historic architectural resources
- Appendix E—Research designs employed by the archaeology and history programs
- Appendix F—Historic contexts that provide supplemental historical information about the area now encompassed by INL
- Appendix G—Sitewide programmatic agreement
- Appendix H—Inventory of known archaeological resources at INL
- Appendix I—Inventory of DOE-ID architectural properties

[1] Unless otherwise specified, subsequent references to INL staff and management include ICP and other contractor personnel conducting work at INL.

- Appendix J—Inventory of cultural resource projects
- Appendix K—Schedule of activities and priorities
- Appendix L—INL cultural resource monitoring plan.

Professional Qualifications and Training

Professional qualification standards for cultural resource investigators are an important element of the secretary of Interior's standards and guidelines. As such, all INL cultural resource investigations must comply with those qualification standards, which ensure that a consistent level of expertise is applied nationally to the identification, evaluation, registration, documentation, treatment, and interpretation of cultural resources. They also assure credibility in the practice of historic preservation at all levels.

Professional qualification of cultural resource investigators is also a key factor in DOE-ID's and BEA's ability to conduct autonomous management of INL's cultural resources because the Idaho SHPO has made retention of qualified internal INL cultural resource staff a condition for allowing DOE-ID and its contractors the autonomy for the decision-making processes outlined in this plan (Idaho SHPO May 22, 2003). In addition, the Idaho SHPO has refused to review cultural resource studies conducted by persons who do not meet the minimum qualification standards, as set forth in 36 CFR Part 61, "Professional Qualification Standards."

The following subsections describe the minimum qualifications to supervise and report on cultural resource studies at INL and to make recommendations based on those studies.

Archaeology

Archaeology is the study of past human lifeways through the systematic observation, analysis, and protection of their material remains. The professional standard for archaeologists calls for a graduate degree in archaeology, anthropology, or a closely related field, plus **all** of the following:

- At least one year of full-time professional experience or equivalent specialized training in research, administration, or management
- Demonstrated ability to carry research to completion
- At least one year of full-time professional experience at a supervisory level in the study of archaeological resources of the prehistoric or historic periods.

Architectural History

Architectural history is the study of the development of building practices through written records and design, and the examination of structures, sites, and objects in order to determine their relationship to preceding, contemporary, and subsequent architecture and events. Professionals in this field must have a graduate degree in architecture or art history, historic preservation, or a closely related field, with coursework in American architectural history. In lieu of the aforementioned graduate degrees, professionals must have an undergraduate degree in architectural history, art history, historic preservation, or a closely related field, plus **one** of the following:

- At least two years of full-time experience in research, writing, or teaching in American architectural history or restoration architecture with an academic institution, historical organization, agency, museum, or other professional institution
- Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

Cultural Anthropology

Cultural anthropology is the description and analysis of cultural systems, which includes systems of behavior (economic, religious, and social), values, ideologies, and social arrangements, and includes the study of past societies. Minimal professional qualifications include a graduate or undergraduate degree in

anthropology or a closely related field such as ethnography, plus **both** of the following:

- Minimum of two years of full-time professional experience applying the theories, methods, and practices of cultural anthropology to the identification, evaluation, registration, documentation, or treatment of historic and prehistoric properties
- Products and activities that demonstrate the successful application of acquired proficiencies in the discipline to the practice of historic preservation.

Historic Architecture

Historic architecture is the practice of applying artistic and scientific principles to the research, planning, design, and management of the built environment with specialized training in the principles, theories, concepts, methods, and techniques of preserving historic buildings and structures. The minimum professional qualifications in historic architecture are a professional degree in architecture or a state license to practice architecture, plus **one** of the following:

- One year of graduate study in architectural preservation, American architectural history, preservation planning, or a closely related field, with emphasis on detailed investigation of historic structures, preparation of research reports on such structures, and preparation of plans and specifications for preservation projects
- Minimum of one year of full-time professional experience on historic preservation projects with the same emphasis as the one-year graduate study.

Historic Landscape Architecture

Historic landscape architecture is the practice of applying artistic and scientific principles to the research, planning, design, and management of both natural and built environments with specialized training in the principles, theories, concepts, methods, and techniques of preserving cultural and historic landscapes. Professionals in this field must have a five-year professional degree in landscape architecture, plus **both** of the following:

- Three years of full-time professional experience applying the theories, methods, and practices of landscape architecture to the identification, evaluation, registration, documentation, or treatment of historic properties
- Products and activities that demonstrate the successful application of acquired proficiencies in the discipline to the practice of historic preservation.

The three years of full-time professional experience may be replaced with one year of comparable experience if it is accompanied with a state-recognized license to practice landscape architecture. The other qualification requirements still apply.

Historic Preservation

Historic preservation is the application of strategies that promote the documentation, protection, treatment, continued use, and interpretation of prehistoric and historic resources. Professional standards in this field call for a graduate degree in historic preservation or a closely related field of study, plus **both** of the following:

- Two years of full-time professional experience applying the theories, methods, and practices of historic preservation to the identification, evaluation, registration, documentation, or treatment of historic properties
- Products and activities that demonstrate the successful application of acquired proficiencies in the discipline to the practice of historic preservation.

The graduate degree may be replaced with an equivalent undergraduate degree if it is accompanied with four years of the aforementioned full-time professional experience, products, and activities.

History

History is the study of the past through written records, oral history, and material culture and the examination of that evidence within a chronological or topical sequence in order to interpret its relationship to preceding, contemporary, and subsequent events. The minimum professional qualifications in history are a graduate degree in history or a closely related field. In lieu of the graduate degree, the professional must have an undergraduate degree in history or a closely related field, plus **one** of the following:

- At least two years of full-time experience in research, writing, teaching, interpretation, or other demonstrable professional activity with an academic institution, historical organization, agency, museum, or other professional institution
- Substantial contribution through research and publication to the body of scholarly knowledge in the field of history.

CULTURAL RESOURCES OF THE IDAHO NATIONAL LABORATORY

This section describes the natural INL environment and past and present human land use. Contextual overviews of this lengthy span of occupation are introduced along with summary descriptions of the cultural resource base. Preliminary research designs are included in Appendix E and more detailed historic contexts are provided in Appendix F.

Description of the Idaho National Laboratory

INL is a federal reserve with an area of approximately 2300 km^2 (890 mi^2) covering portions of five counties on the northeastern edge of the Snake River Plain in southeastern Idaho (DOE-ID 1996; Irving 1993). INL, which is currently under DOE-ID jurisdiction, supports activities and research that includes, but is not limited to, nuclear energy research and development, Department of Homeland Security technologies development and demonstration, and environmental restoration. With the exception of areas permitted for livestock grazing through the Bureau of Land Management (BLM), limited hunting overseen by the Idaho Department of Fish and Game, and travel along public highways, general public access to the INL area has been restricted since the 1940s.

Past and Present Land Use

During World War II, the U.S. Navy set aside the core area of what was to become INL, through public land withdrawal and purchase, as the Naval Proving Grounds (NPG), a naval gun testing range, and aerial bombing range. Beginning in 1949, the Atomic Energy Commission (AEC), a predecessor agency to DOE, increased the size of the NPG, designated the new larger area as the National Reactor Testing Station (NRTS), and began important nuclear energy research and engineering. In 1974, changing missions led DOE to rename the NRTS reserve to the Idaho National Engineering Laboratory (INEL). In 1975, it was designated as a National Environmental Research Park, recognizing the ecological diversity and research potential of the large and relatively undisturbed land area included within its boundaries. In 1997, increasing emphasis on environmental restoration and stewardship was reflected in another name change to the Idaho National Engineering and Environmental Laboratory (INEEL). In 1999, the U.S. secretary of energy designated a large portion of INEEL as a "Sagebrush-Steppe Ecosystem Reserve," recognizing the important and largely undisturbed resource inventories located there. Then in February 2005, with the separation of the national laboratory and environmental restoration missions into two separate contracts, INEEL was renamed to its current designation of INL, with the environmental restoration project designated as ICP.

Several geographically separated facility areas exist at INL. Some continue to be active; others have been remediated in accordance with federal requirements and are marked only by soil caps and monuments that warn of the contamination below ground level. One facility, the Experimental Breeder Reactor I (EBR-I), is designated as a National Historic Landmark and has been converted to an interpretive center for the public. INL facility areas stand in relative isolation to each other, in between which are large expanses of undeveloped high-desert terrain dotted with auxiliary structures, roads, and trails (see Figure 3). Primary INL areas are:

- Army [Auxiliary] Reactor Area
- Central Facilities Area
- Critical Infrastructure Test Range Complex
- Experimental Breeder Reactor I
- Idaho Nuclear Technology and Engineering Center
- Materials and Fuels Complex
- Naval Reactors Facility
- Radioactive Waste Management Complex
- Reactor Technology Complex
- Test Area North.

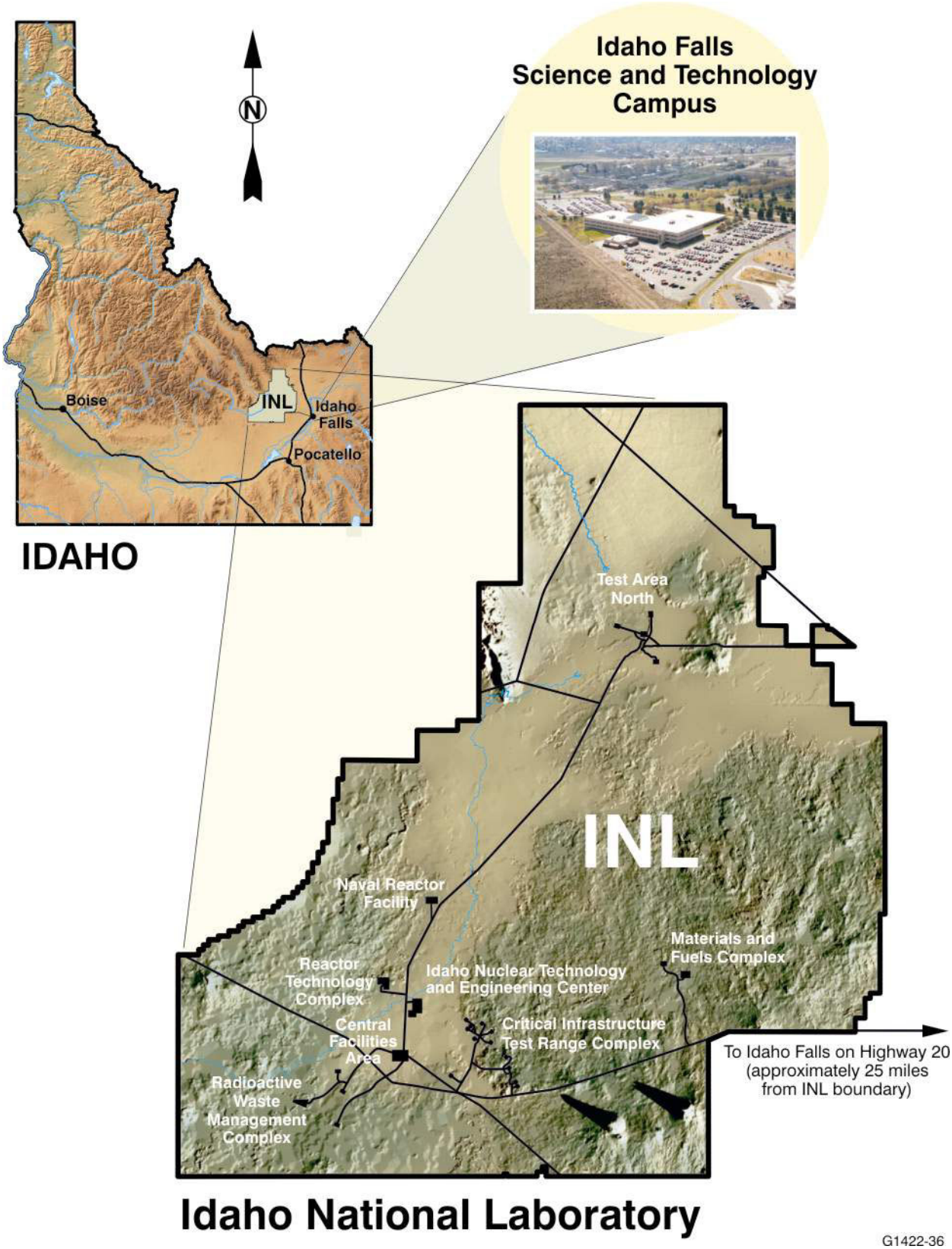

Figure 3. Physiographic setting of the Idaho National Laboratory showing locations of major facilities.

INL lands and facilities are under the direction of DOE-ID, with the exception of NRF, which is under the direction of DOE's Office of Naval Reactors. Day-to-day operations are managed by contractors selected by the Department of Energy.

Prior to 1949, the region that now includes INL was utilized rather sporadically by explorers, Oregon trail emigrants, ranchers, homesteaders, canal builders, and stagecoach and freighter companies. Old trails, basalt foundations, trash dumps, and canal works are a testament to the tenacity of these early historic occupants. At the same time, and extending at least as far back as 12,000 years ago, American Indian hunter-gatherers found a multitude of useful resources on the high desert that would become INL. Remnants of their activities suggest that prehistoric group visited the area regularly, but probably seasonally, for thousands of years.

The sections to follow present additional details on past land use at INL and the cultural resources that preserve a record of it. The descriptions begin with an overview of the natural setting and landscape, which have been important in different ways to the people who have lived and worked in the region. American Indian prehistorical and historical land use, which is tied so intimately to the resources that the landscape offered, is described next. Euro American immigrants made various efforts to use INL lands during the historic period. These efforts, which are subsequently described, may have failed because of a general lack of understanding of the high-desert setting and landscape. The final land use description in this section focuses on more recent historic activities associated with INL and its predecessors. Historical highlights drawn from the World War II and nuclear science and engineering contextual period of significance (1942 to 1970) are provided for major INL facilities and programs. (More detailed historic contexts are presented in Appendix F, primarily for the period extending from World War II to the present.) This most recent account of historical INL land use concludes with the potential impacts to all types of cultural resources as a result of ongoing and future INL operations.

Natural Setting

INL is located in the northeastern portion of the Snake River Plain near the foothills of the Little Lost, Lemhi, and Bitterroot mountains in southeastern Idaho (Bonnichsen and Breckenridge 1982; Kuntz et al. 1984; Link and Hackett 1988; Nace et al. 1972; Nace et al. 1975). The general region is a high altitude "cold desert" or, more accurately, a sagebrush-grassland steppe, with minimal precipitation of 23 cm (9 in.) annually, mostly falling as winter snow and early spring and fall rains. Seasonal and daily temperature extremes vary widely.

The Snake River Plain is a large topographic depression approximately 50 to 100 km (31 to 62 mi) wide that extends from the Idaho communities of Payette in the west, to Twin Falls in the south, and up to Ashton 300 km (186 mi) northeast, forming a curved swath across southern Idaho (Hackett and Morgan 1988; Kuntz 1978). The Plain is divided into two distinct parts: the western Snake River Plain (Payette to Twin Falls) and the eastern Snake River Plain (Twin Falls to Ashton), which are defined by geologic and geophysical features unique to each (Kuntz 1978). The eastern Snake River Plain, where INL is situated, is a broad, flat Cenozoic volcanic feature that is filled by thick sequences of rhyolitic tuffs overlain by 1 to 2 km (0.6 to 1.2 mi) of basaltic lava flows and interbedded sediments (NRF Geotechnical Investigation 1991).

The northern border of the eastern Snake River Plain near INL is formed by the northernmost extent of the fault-block mountains of the Basin and Range Province (Lost River, Lemhi, Bitterroot). Far to the south of INL, fault-block mountains of this province also form the southern boundary of the eastern Snake River Plain. To the west, the rolling terrain of the Plain itself continues uninterrupted. The Yellowstone Plateau lies to the east-northeast and is an extension of the Snake River Plain (Kuntz 1978) and the geologic events that created it. Mountain ranges to the east of the INL region are part of the northern Rocky Mountain Province.

At INL, the Snake River Plain is composed of many superimposed flows of basaltic lava

extruded from low-shield volcanoes, fissures, and tubes over the past two million years during the Quaternary period (Greeley 1982; Mabey 1982; Morgan and Hackett 1989). Over time, these original lava flows have weathered, alluvial and lacustrine deposits have accumulated on top of them in low-lying areas, and a widespread but variable veneer of aeolian sediment has been deposited across the entire region. The result is a subdued modern topography and landscape typified by low, rolling hills punctuated by occasional volcanic features. Elevations range from 1454 to 1652 m (4769 to 5387 ft) above sea level with isolated rhyolitic domes, or buttes, that reach a maximum height of 2304 m (7557 ft).

The topographic results of Quaternary volcanic activity on INL are quite uniform across the area. Common features include low relief pressure ridges, pressure plateaus, collapse depressions, and fissures (Greeley 1982). Though pronounced changes in topographic relief are generally rare, several striking volcanic features are present. The most prominent of these are three buttes (Big Southern Butte, Middle Butte, and East Butte) that dominate the horizon from any vantage point on INL (see Figure 4). These buttes served as important prehistoric and historic landmarks and appear on the earliest maps of this area (Preston 1978).

Figure 4. Big Southern Butte viewed from the Big Lost River.

The Big Southern Butte, just south of the southwestern INL boundary, is a 300,000-year-old rhyolite dome complex and largest of the three buttes. It rises 760 m (2,493 ft) above the Snake River Plain and has a diameter of 6.5 km (4 mi) at its base (Kuntz et al. 1989; Spear and King 1982). It consists of two coalesced domes that grew by internal expansion and an uplifted section of older basalt flows approximately 350 m (1148 ft) thick on its northern flank (Spear and King 1982). The Middle Butte and East Butte are within INL boundaries. The Middle Butte is an uplifted block of basalt lava flows with a rhyolite core. Its exact age has not been determined. The lava flows capping the Middle Butte are approximately 75 m (246 ft) thick and the presence of a rhyolite core is inferred from magnetic and gravity data (Kuntz et al. 1989; Spear and King 1982). The East Butte is a 600,000-year-old rhyolite dome. It rises approximately 350 m (246 ft) above the surrounding terrain and was formed by the same geologic processes that created the Big Southern Butte—subsurface expansion of highly viscous lava (Kuntz et al. 1989).

Other unique volcanic features in the area include rifts, lava tubes, craters, and locally prominent pressure ridges. All of these features exhibit a high density of prehistoric archaeological sites, reflecting their use as vistas, shelters, and hunting and ambush sites; and as areas where water, plant and animal foods, and other raw materials of economic and cultural importance might be found.

One of the most obvious raw materials important for local hunter-gatherers and available on and near INL is stone appropriate for tool-making. Some stone materials produced a very sharp but delicate edge and were commonly used in the manufacture of projectile points and knives. These materials include obsidian, which is available at the Big Southern Butte just south of INL, and ignimbrite (or welded tuff), which is available at Howe Point on the north end of INL. When a task called for an abrader, other volcanic rocks available on INL were sought, such as scoria and pumice.

While volcanic features dominate much of the contemporary landscape of INL, a large portion of the facility is contained within what is known as the Pioneer Basin (Butler 1968). This basin incorporates three important features; the alluvial deposits of the Lost Rivers (Big Lost River, Little

Lost River, and Birch Creek), the sink areas of these same watercourses, and the lake bed of ancient Lake Terreton.

The Big Lost River enters INL at its southwestern border and flows northeast approximately 48.3 km (30 mi) through the Laboratory. This river channel is presently dry throughout most of the year, but probably flowed year-round before upstream irrigation depleted local waterflows (see Figure 5). The river also flooded, occasionally severely, in the recent and distant geologic past. Evidence of these events is seen in the extensive deposits of alluvial material that have accumulated near the watercourse and in some expanses that extend up to 8 km (5 mi) away. The myriad of abandoned stream channels and meander scars that cross the Big Lost River floodplain also testify to higher water levels in the past. These alluvial features probably gained much of their present character during the Pleistocene epoch when higher moisture levels increased stream flow and provided the energy necessary for their creation (Pierce and Scott 1982).

Figure 5. Big Lost River during seasonal water flow.

The Big Lost River, the Little Lost River, and Birch Creek all terminate in sink areas near the northern INL boundary. It is here that the watercourses cease all overland flow and enter the underground Snake River Plain aquifer by seeping through fine sediments and porous basalt bedrock. If unimpeded by modern water control projects, most surface water on INL would eventually drain to one of these areas (Lewis and Jensen 1984).

During the Pleistocene epoch, when high discharge from the Big Lost River combined with increased flows from the Little Lost River and Birch, Beaver, and Camas creeks, the sink areas were completely submerged by the waters of Lake Terreton. This shallow inland lake once covered approximately 233 km^2 (35 mi^2) of INL land—now occupied by sagebrush grassland, playas, and low dunes—and extended far to the east (Butler 1978; Nace et al. 1975). While the lake probably reached maximum extent at the close of the last glacial period, paleontological studies (Bright and Davis 1982) suggest that the basin may have partially filled as recently as 700 years ago. Decreases in the amount of available moisture during the Holocene epoch and as a result of modern water diversion practices have transformed the lake into a dry and relatively barren expanse of silts, clays, and sand dunes. Usually, the only standing water held by the basin today occurs in early spring when runoff is high and the sinks become marshy.

The basaltic plains of INL also contain a number of scaled down and isolated versions of Pleistocene Lake Terreton. The area commonly known as Rye Grass Flats near the main INL entrance is one example. Playas such as this generally occur in low-lying areas atop the older lava flows. However, unlike Lake Terreton, which was dependent upon the discharge of local rivers and streams, the moisture levels in these features are maintained exclusively through the seasonal flow of intermittent drainages or high precipitation rates. Today, the small playas rarely hold water; but in the past, when moisture levels were higher, each of the basins probably offered a shallow, semi-reliable, seasonable source of water. The grasses and forbs that would have thrived in the moisture-laden soil would have attracted game animals, and a rich aquatic community would have been supported as well. Prehistoric cultural materials found in abundance near the playa deposits offer evidence to suggest that hunters once took advantage of this suite of useful resources.

The relatively permanent water sources at the Big Southern Butte, the Lost Rivers, the sinks, and, during prehistoric times, Lake Terreton, were essential and well known to the inhabitants

occupying or crossing the Snake River Plain. There are high concentrations of prehistoric sites in those areas, and well-used early historic trails and wagon and stage roads connect them (often replaced by modern railroads and highways). Many of these areas contain evidence of historic attempts to store water and divert streams for agriculture.

All of the geographic features described in the previous paragraphs are blanketed by a discontinuous layer of windblown Holocene sands and silts. These aeolian deposits are derived from distant upwind sources and from the eroded rocks of nearby mountain ranges, and then redeposited by mountain streams at the northern margin of the Snake River Plain. The thickness of these deposits is variable, ranging from a thin dusting on top of the more recent lava flows to accumulations of more than 3 m (10 ft) in low-lying areas and at flow margins (Nace et al. 1975). Wind action has also produced and continues to influence a series of dune fields in the north-central portion of INL downwind from the sinks and the Lake Terreton basin. The abundance of prehistoric sites in this area indicates that human populations apparently took advantage of the relative comfort provided by these accumulations of soil and sand and, at times, the nearby aquatic resources.

Flora and Fauna

Plant life at INL is strongly influenced by climate and topography and is generally similar to other cool desert environments of the Great Basin and the Columbia Plateau. Communities range from shadscale steppe at lower altitudes, to several sagebrush- and grass-dominated communities, to juniper woodland along the foothills of the nearby mountains and buttes. Although the relative dominance and boundaries of these general communities have expanded and contracted in response to variation in available moisture and temperature regimes, palynological data indicate their continued presence since the late Pleistocene glacial periods (Davis and Bright 1983).

A total of 20 to 22 distinct vegetation cover types have been identified on present-day INL (McBride et al. 1978). Although the specific makeup of each cover type varies according to differences in soil composition and available moisture, big sagebrush (*Artemesia spp.*) is a component of almost every identified community and occurs on approximately 80% of INL (French et al. 1965; Harniss and West 1973). A variety of grasses, cacti, forbs, and low shrubs dominate the understory in nearly every cover type (see Figure 6).

Differences in vegetation cover are significant in the archaeological study of INL because many of the vegetation communities and their corresponding topographic situations provide microenvironments within the basaltic terrain. In turn, these microenvironments provided people with a number of opportune camping locations. Pressure ridges, in particular, offered shelter throughout much of the area. These protected areas were probably attractive mainly as shelter from prevailing winds, but they also tend to trap moisture in deep aeolian deposits and, thus, support a variety of useful plants in the spring and early summer. The Big Lost River channels, sink areas, and playas would have also provided a variety of useful vegetable materials and water for people and livestock. The variety of native plant species on the eastern Snake River Plain and INL (Atwood 1970) can be surprising to the casual modern observer, but a great number of these were known and used in a variety of sophisticated ways by indigenous people (Anderson et al. 1996).

Figure 6. Springtime vegetation at INL.

A total of 219 resident and seasonal vertebrate species live on or frequent INL today (Arthur et al. 1984; Reynolds et al. 1986). Birds constitute the

largest single class of wildlife in this census, although many of these are migratory. Small mammals are the most common year-round residents. Of particular cultural interest are species that are known or expected to have been utilized by people. Many of these, including mammoth and camel, are now extinct in North America. However, archaeological sites near INL, such as Bison Rockshelter and Veratic Rockshelter (Swanson 1972), Owl Cave (Butler 1978, 1986; Miller 1982, 1990), and Jaguar Cave (Dort 1975; Guilday and Adams 1967; Kurten and Anderson 1972), provide evidence of these animals' past presence and indications of their importance to prehistoric people. It is certain that many species also provided welcome meals and useful products for early historic explorers, Oregon Trail emigrants on their way through the area, and early homesteaders who tried to make a living there.

The most abundant big game animal currently in residence at INL is the pronghorn (*Antilocapra americana*) (see Figure 7). It is estimated that up to 40% of the pronghorn population of Idaho (as well as many from Montana) may utilize the area during the winter months (Hoskinson and Tester 1980).

Figure 7. Pronghorn on the INL high-desert plain.

Deer, elk, and mountain sheep are also occasionally observed at INL. Other big game animals, such as bison, no longer inhabit the area, but were also utilized by prehistoric and early historic populations. Bison Rockshelter, Veratic Rockshelter, Owl Cave, and Wilson Butte Cave contained bison remains with associated cultural materials. Test excavations at a small prehistoric site near the INL Critical Infrastructure Test Range Complex (CITRC; formerly Power Burst Facility [PBF]) also indicate that bison were once hunted within INL boundaries (Ringe 1988).

Prehistory: Paleontology and Paleoecology

Fossils of several different time periods have been found in southern Idaho near and within INL boundaries, from truly ancient marine invertebrates in the limestones of the central and eastern mountains to packrat middens and trees a few centuries old on the basaltic plains. Fossils of interest from the Pleistocene and Holocene have primarily been recovered from lake, marsh, and river deposits of the Snake River and Lost River systems; lava tubes, rockshelters, and caves; and archaeological sites. These finds and a few subsequent investigations allow a glimpse into the prehistoric biology and ecology of the Snake River Plain. They suggest direction for future scientific work and form the basis for a preliminary interpretation of past conditions.

Much of the paleoecological work has centered on the eastern Snake River Plain Pleistocene and Holocene epochs. This work has been research oriented and conducted at lava caves (see Figure 8) and rockshelters on the Plain proper as a paleontological effort or in conjunction with archaeological investigations (cf. Bright and Davis 1982; Butler 1968, 1972, 1978; Davis and Bright 1983; Dort and Fredlund 1984; Dort and Miller 1977; Fredlund and Dort 1986; Miller 1982, 1983, 1990; White et al. 1984).

Figure 8. Entrance to West Rattlesnake Cave at INL.

Gradually, as a result of this paleoecological work and other investigations, a panorama of the western North American Pleistocene-Holocene transition is beginning to emerge. It begins with the recession of major continental glaciers and a decline in montane glaciation, followed by a period of increased aridity.

The last of the Pleistocene megafauna, such as mammoth (*Mammuthus columbi*), large bear (*Arctodus simus*), camel (*Camelops hesternus and Camelops sp.*), and dire wolf (*Canis dirus*), became extinct by 9000 before present (B.P.). Boreal species such as caribou (*Rangifer tarandus*) were isolated at higher altitudes or displaced to northern latitudes. Major inland pluvial lakes, probably including Lake Terreton on INL, shrank and vegetation zones were altered. Although the climatic mechanisms responsible for this change are poorly understood, severe seasonal temperature fluctuations and lack of effective moisture are recognized at a number of paleontological and paleoecological sites. The altithermal (i.e., warming period), which varies in timing and severity with geographic location, appears to be a drier period than present. The effects of the altithermal reached a maximum at approximately 7000 B.P. in western North America. Climatic adjustments following the altithermal period—interpreted to be a continuation of an interglacial period—led to the establishment of modern conditions.

Prehistory: The First Americans

Systematic archaeological investigation of southeastern Idaho prehistory began in 1958. Since that time, several major excavations have been completed, including:

- Wilson Butte Cave southwest of INL (Gruhn 1961, 1965)
- Birch Creek sites, Bison Rockshelter, and Veratic Rockshelter north of INL (Swanson 1972)
- Wasden site and Owl Cave just east of INL (Butler 1978; Butler 1986; Miller 1982, 1990)
- Wahmuza site to the south (Holmer 1986b; Jimenez 1986).

Three decades of intensive survey and test excavation projects on INL (cf. Miller 1995; Reed et al. 1987a, 1987b; Ringe 1995) have also contributed to a greater understanding of the region. These projects have helped to document human use of the eastern Snake River Plain by hunting and gathering populations for a span of at least 12,000 years and provide the database for regional chronological sequences (cf. Butler 1986; Franzen 1981; Ringe et al. 1988; Swanson 1972) and analyses of settlement and subsistence (cf. Reed et al. 1987a, 1987b; Ringe and Braun 1993; Ringe 1995).

The prehistoric cultural chronology (see Figure 9) for southeastern Idaho is broken into three major periods; (1) early prehistoric, (2) middle prehistoric, and (3) late prehistoric. These periods were marked by major changes in weapon systems and in the types of projectile points that were used (Ringe et al. 1988). A fourth period, the protohistoric, began with the first appearance of Euro American trade goods in archaeological assemblages that still reflect a reliance on traditional practices of hunting and gathering. The most recent cultural period recognized in southeastern Idaho is the historic, which was marked by the settlement of Euro American people in the region.

Early Prehistoric Period: 15,000 to 7,500 B.P.

One of the most significant features of eastern Snake River Plain prehistory is its time depth. The earliest evidence of human occupation in the region is found at Wilson Butte Cave where cultural deposits have been radiocarbon dated to the late Pleistocene epoch at 14,500 years B.P. (Gruhn 1965). Environmental conditions during the terminal Pleistocene epoch were probably considerably cooler and wetter than they are today. However, palynological (pollen) studies in the region (Davis and Bright 1983) indicate that vegetation during this time was essentially modern. The principal difference between then and now is in the distribution of vegetation zones.

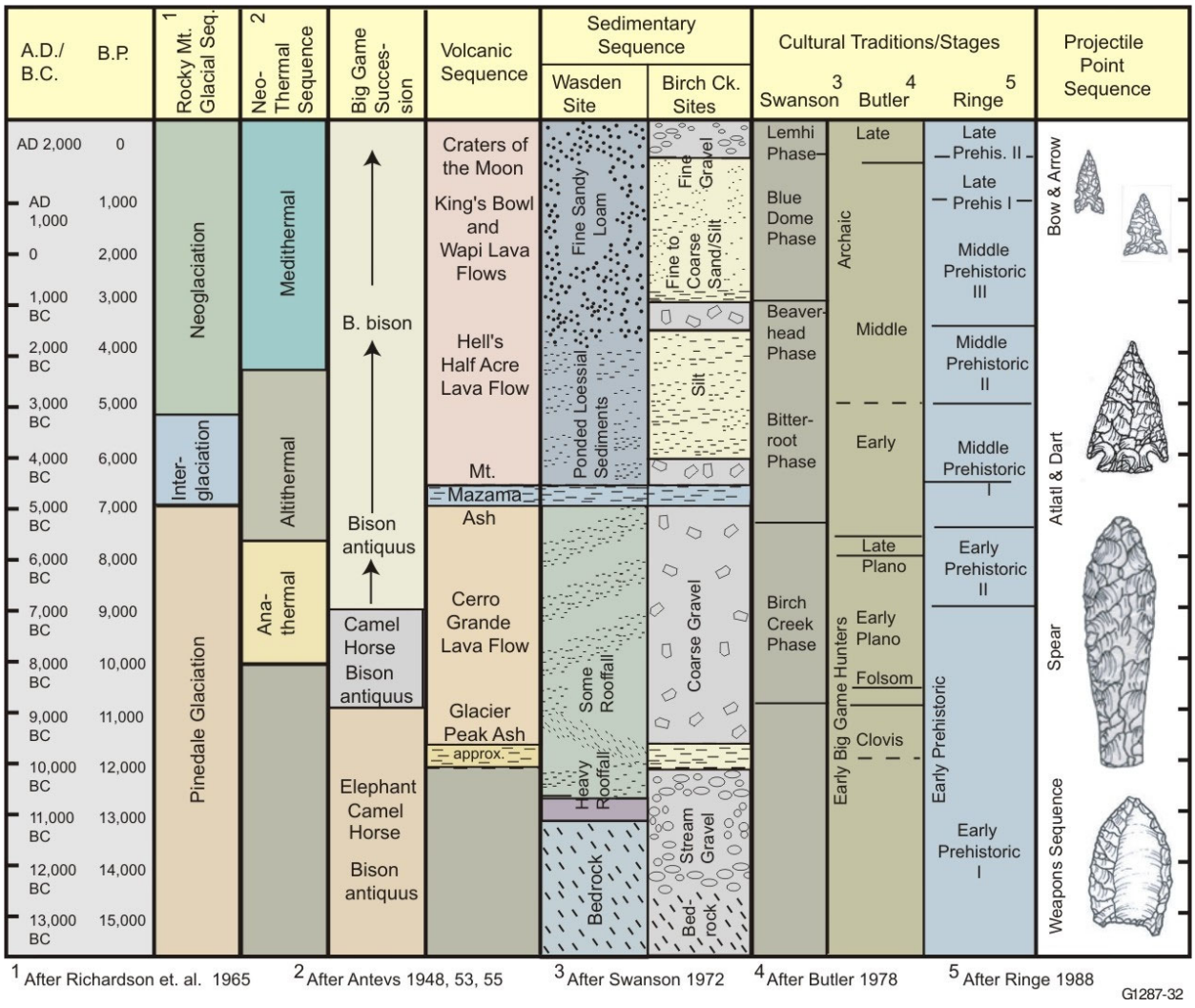

Figure 9. INL prehistoric chronological sequence.

During the Pleistocene epoch, the mountains north of the Snake River Plain were wooded and glaciated (Knoll 1977), and the mountain valleys probably supported an alpine tundra biome (Sadek-Kooros 1972). Many of the higher prominent points on the Plain may have also supported a coniferous forest (Bright 1966). The Plain itself was characterized by sagebrush-grassland steppes, much as it is today (Bright and Davis 1982). Small internal playas probably held shallow stands of water, and equally shallow Lake Terreton was probably at maximum extent, covering more than 91 km^2 (35 mi^2) in the northeastern portion of INL and extending a considerable distance to the east (Bright and Davis 1982). This environment supported a diverse fauna, including now-extinct forms of mammoth, camel, and horse, whose fossils have been found on INL, and also several modern species, such as bison and mountain sheep (Ringe et al. 1987). The archaeological record indicates that the economy of early prehistoric people was based mainly on this large game, although it is certain that a wide variety of smaller animals and local plant resources were also exploited. The sagebrush grasslands and internal playas of the area would have provided excellent browse for Pleistocene animals and productive hunting and gathering opportunities for people.

Large lanceolate spear points of several varieties are the diagnostic artifacts of the early

prehistoric period, suggesting that a spear hunting technology was in place. The earliest known point styles, Clovis and Folsom, are leaf shaped in outline and exhibit characteristic channel flake scars (i.e., flutes) that extend from the base to near the tip of the implements. The best information on the dates associated with these early implements comes from the Wasden site and Owl Cave, a collapsed lava blister near INL (Butler 1978, 1986; Miller 1982, 1990). The earliest cultural levels at Wasden revealed fragments of fluted points in association with the remains of mammoth, bison, and camel. Radiocarbon dates place this association between 10,000 and 12,000 B.P. Several Folsom points have also been recovered from undated surface contexts on INL (Butler 1970; Reed et al. 1987a, 1987b; Ross et al. 1986).

Around 10,000 B.P., fluted points became rare in the archaeological record and unfluted lanceolate and stemmed forms began to occur in more significant numbers, a trend that continued until approximately 7500 B.P.

This change may be related to the extinction of some forms of Pleistocene megafauna and a concurrent change in the style of weapons used to bring down the creatures that remained. From approximately 10,000 B.P., the environment gradually warmed, although cold pulses were still common (Currey and James 1982). These changing conditions may have contributed to the demise of some megafauna species. Mammoths were gone from the Plain by approximately 11,000 B.P. and others ,such as the camel and Pleistocene horse, were gone by 9000 B.P. (Ringe et al. 1987).

Projectile point styles from this time are lanceolate in outline, and many are stemmed, or shouldered. Most point styles are called by names originally coined in the northwestern plains where a number of well-stratified sites have been investigated. This includes lanceolate varieties such as Agate Basin and Milnesand, and stemmed or shouldered varieties known as Alberta, Eden, Scottsbluff, and Hell Gap (Frison 1978; Wormington 1957).

Two lanceolate point varieties known as Haskett and Birch Creek were initially defined and continue to be found in many cave and surface sites on the Snake River Plain and INL (see Figure 10). Haskett points were first recognized in south-central Idaho where they were associated with bison bones and radiocarbon dates between 9800 and 10,000 B.P. (Butler 1978; Sargeant 1973); but they also have a wide distribution in surface sites throughout the region, including INL (Reed et al. 1987a, 1987b). Birch Creek points were found in direct association with a series of 8000-year-old bison kills at the Wasden site and Owl Cave (Butler 1978, 1986; Miller 1982) and at Bison Rockshelter and Veratic Rockshelter in the Birch Creek valley (Swanson 1972). Evidence from all locations, dated or not, suggest that the people who used these points were relying heavily on animal species such as bison and mountain sheep, which survived the transition from the Pleistocene to the Holocene epoch.

Figure 10. Haskett spear point found at INL.

Middle Prehistoric Period: 7500 to 1300 B.P.

The close of the early prehistoric period and the beginning of the middle prehistoric period was marked by a major change in projectile point structure and form, probably corresponding to a major shift in hunting technology. Large spear points characteristic of the earlier period were almost entirely replaced by smaller notched and stemmed forms. This transition probably represents the adoption of an atlatl (i.e., spear thrower) technology, which may have been more effective in exploiting newly evolved species that survived the Pleistocene-Holocene transition. The presence of ground stone in middle prehistoric

contexts at some sites such as Wilson Butte Cave (Gruhn 1961) and the Birch Creek Rockshelters (Swanson 1972) also suggests that plant foods such as camas may have gained increased importance during this time. However, available evidence suggests that hunting still remained the dominant economic endeavor. Thus, the middle prehistoric period on the eastern Snake River Plain was marked by some changes in lifestyle, but it did not represent a major break from the previous early prehistoric period.

The environment during the middle prehistoric period was one of transition. A general warming trend continued, reaching a point of maximum warmth and dryness at approximately 3800 B.P. (Currey and James 1982), but available evidence seems to indicate that these conditions did not produce dramatic environmental changes in the area. Pleistocene Lake Terreton probably declined to its present seasonally marshy state, and the internal playas held little, if any, standing water. However, pollen profiles indicate that modern xeric (i.e., dry) vegetation was present throughout the interval (Davis and Bright 1983). This essentially modern habitat supported many animals that were of economic importance to human populations, including modern bison and antelope on the grasslands and mountain sheep and deer in the higher elevations.

Projectile point forms from middle prehistoric contexts suggest that this was a time of some cultural reorganization and mobility. The archaeological record reflects this in a proliferation of point styles, which appear to have correlates in the northwestern plains and the Great Basin. It appears that people from these surrounding areas were moving in and out of the eastern Snake River Plain, perhaps in response to deteriorating environmental conditions (Benedict 1979; Madsen 1982).

The diagnostic time markers of the initial portion of the middle prehistoric period are Bitterroot or Northern Side-Notched points (Greiser 1984; Gruhn 1961; Swanson 1972) and sporadic stemmed-indented base points that resemble the Pinto series of the Great Basin (Holmer 1986a). Both forms occur in prehistoric contexts ranging from 7500 to 5000 B.P. at sites such as the Birch Creek Rockshelters (Swanson 1972) and further south at Weston Canyon Rockshelter (Miller 1972). At both of these sites, mountain sheep appear to have been the preferred prey in an economy that continued to be focused on the acquisition of game animals.

Between approximately 5000 and 3500 B.P., large side-notched points decreased in frequency, and around 4500 B.P., stemmed-indented base points became the dominant style of dart in the region (see Figure 11). Large corner-notched varieties and new small lanceolate forms also made their first appearance around 4000 B.P., but did not become dominant until later. Once again, mountain sheep and bison appear to have been the favored game.

Figure 11. Elko corner-notched dart point found at INL.

During the latter part of the middle prehistoric period, from approximately 3500 to 1300 B.P., eastern Snake River Plain assemblages continued to contain a wide variety of point styles, although the predominant type changed from stemmed-indented base to large corner-notched points. These resemble the Elko series in the Great Basin (Holmer 1986a; Thomas 1981) and the Pelican Lake type in the northwestern plains (Greiser

1984; Reeves 1983). Lanceolate points such as the Wahmuza lanceolate (Holmer 1986b) and the Humboldt (Holmer 1986a) or McKean lanceolate (Greiser 1984) are also common in middle prehistoric assemblages. No major changes in the basic hunting adaptation are indicated during this subperiod.

Late Prehistoric Period: 1300 to 150 B.P.

The late prehistoric period is the best represented and the most debated on the eastern Snake River Plain. It embraces Swanson's Lemhi Phase in the Birch Creek valley (Swanson 1972), Gruhn's Dietrich Phase on the Plain (Gruhn 1961), and Jimenez's Ahvish Phase in the Snake River bottoms (Jimenez 1986). The period is marked by another probable change in weapon technology—adoption of the bow and arrow, probably used concurrently with the atlatl and dart weaponry of the earlier middle prehistoric period.

Archaeologically, the late prehistoric period is recognized by a decrease in projectile point size (see Figure 12). Small corner-notched points that closely resemble the Rosegate Series of the Great Basin (Thomas 1981) occurred first and remained dominant until approximately 700 B.P. Small points with low side notches known as Avonlea in the northwestern plains (Greiser 1984) also occurred between 1300 and 700 B.P. These two styles were followed by small side- and tri-notched arrow points. Known as Desert Side-Notched points (Holmer 1986a; Thomas 1981), they dominate assemblages from approximately 700 to 300 B.P. when stone-tipped arrows began to be replaced by firearms of Euro American manufacture.

Aboriginal ceramics also appear as diagnostic time markers of the late prehistoric period. This pottery commonly occurs in eastern Snake River Plain assemblages after 700 B.P., but evidence from the Wahmuza site suggests that ceramics were in use at the much earlier date of approximately 1,200 B.P. (Holmer 1986b). Finally, the larger lanceolate and corner-notched forms of the middle prehistoric period also continue to persist in small numbers throughout the entire late prehistoric period.

Figure 12. Late prehistoric small arrow points and point fragments found at INL.

Modern environmental conditions prevailed throughout the entire late prehistoric period, except for a few cold pulses and a brief period of increased moisture at 700 B.P. when Lake Terreton is thought to have once again filled its shallow basin (Davis and Bright 1983). A typical Holocene fauna, including modern bison, was also present throughout this period.

Available evidence suggests that subsistence strategies continued to be based largely on the hunting of large game animals. Plant foods must have also played some role in late prehistoric economics; however, there is little evidence to suggest that they were as important in the diet as they were in the Great Basin, the Columbia Plateau, and even in southwestern Idaho. When they are found in the eastern part of the state, plant processing tools usually consist of mortars and pestles, which would have been used to process root crops such as camas or bisquitroot. The general lack of grinding stones suggests that seed products were not common dietary elements, perhaps because they are generally more costly than root crops or big game animals in terms of pursuit and processing time relative to caloric returns (cf. Simms 1984).

Excavations at the following sites provide some indication of the overall economic activities of late prehistoric populations:

- Wahmuza site (Holmer 1986b), an open campsite on the Fort Hall bottoms of the Snake River

- Baker Caves (Plew et al. 1987), a series of three small lava tubes on the Snake River Plain east of Minidoka
- Aviators' Cave on INL (Lohse 1989).

The excavated assemblages from these sites suggest that people were spending the winter months at camps along the Snake River where they probably relied on stored foods, such as bison, deer, and camas or bisquitroot. These stored resources were obtained on an annual subsistence round that probably included the INL area. During the winter, these people also probably made short forays into the surrounding sagebrush grasslands and mountain ranges to obtain fresh meat, and apparently did some fishing in nearby rivers and streams. During the warmer months, people apparently dispersed to hunt and gather throughout the region and probably created many of the sites found on INL as they foraged.

Protohistoric Period: 300 to 150 B.P.

The nomadic hunting and gathering lifestyle of the late prehistoric period continued in southeastern Idaho even after the introduction of European horses and trade goods about 200 to 300 years ago. However, adoption of the horse by some groups at this time led to significant changes in aboriginal lifeways. These changes included increases in exploitative range, interaction with other groups, warfare, and changes in leadership roles.

History: American Indians

INL is included within a large territory once inhabited by two linguistically distinct American Indian groups—the Shoshone and the Bannock. Both aboriginal groups (and a variety of subgroups within the Shoshone family) shared a common way of life that allowed them to effectively utilize a wide variety of locally available resources. Early explorers, anthropologists who visited the area, and tribal oral histories have left a record of these groups that is incomplete but still useful in providing clues about the lifeway that was practiced. Because of the overall continuity expressed in the prehistoric record of the area, the information provided by these early historic and tribal sources is also important in the inferential interpretation of archaeological sites.

Prior to the introduction of the horse, the sociopolitical organization of the Shoshone and the Bannock Tribes was fluid. Individuals and even entire families could move as freely from one social unit to another as they moved from one food resource to another (Liljeblad 1957). The introduction of equestrian mobility by the 18th century caused development of a more distinct, formalized band organization. Use of horses allowed the Shoshone and Bannock Tribes to increase their exploitative range, to congregate in larger groups for longer periods of time, and to protect their possessions from groups of marauding Blackfoot Indians who also frequented the area (Steward 1938).

The absence of a restrictive sociopolitical organization is a reflection of the highly nomadic lifestyle of the Shoshone and Bannock Tribes. The groups were continually on the move in order to utilize a variety of seasonally available resources, and, in contrast to their linguistically related kin in the Great Basin, probably enjoyed a relative abundance of food and other material resources. A large proportion of this general abundance was found in and near rivers and streams (e.g., Snake River and Big Lost River) that flow through even the driest and most desolate parts of southern Idaho. This led to an entire complex of subsistence, religious, and social activities that centered on the riverine habitat (Clark 1986). Consequently, many of the larger Shoshone and Bannock villages were located near waterways. However, because the dispersed nature of the resource base required these groups to be highly nomadic, these villages were not occupied on a continuous, year-round basis. Instead, they were probably utilized again and again only during the winter months when weather forced less mobility. During the remainder of the year, native groups apparently dispersed to utilize resources that were often found far from these wintering grounds.

This unique seasonal round, as augmented by the horse, has been documented by early anthropologists (Murphy and Murphy 1960, 1986; Steward 1938). These researchers report that the Shoshone and the Bannock Tribes of southeastern

Idaho gathered in large winter villages, primarily along the Snake River in the Fort Hall area. During the winter, they lived on stores of meat, fish, and plant foods. In addition, they fished in nearby streams and made short forays into neighboring areas to supplement their supplies with fresh meat. When winter came to a close, the people split into smaller groups and traveled to other areas in southern Idaho as resources became seasonally available.

Many different areas were visited during these annual expeditions. In the spring, groups traveled to salmon fishing areas along the Snake River west of Twin Falls and to the camas prairies in central Idaho near Fairfield and Dubois (Murphy and Murphy 1960). Two main routes were followed during this springtime expedition: one followed the Snake River, and then north by a number of routes; and the other proceeded from the Fort Hall and Idaho Falls area across to the Big Lost River and then west, skirting along the southern edge of the mountains. This latter route may have caused American Indians to pass directly through the INL area.

In the late summer and early autumn, big game hunting became an important activity, and most groups moved east to participate. Many followed a trail from the Idaho camas prairies east along the edge of the mountains to the Big Lost River. From there, the routes separated depending on the destination. Some groups traveled up the Little Lost River, crossed east to the Lemhi River and over Lemhi Pass, and continued east onto the Great Plains. Other groups headed toward the Snake River near Idaho Falls, and then north over Monida Pass. Still others followed a route along the Snake River to the Jackson Hole and Yellowstone area. Some groups also returned to Fort Hall, and then went south to the Bear River Valley and into northern Wyoming. Finally, some groups chose to go north to the Salmon River area for the late season salmon run.

It is important to stress that these are only the major routes and destinations, and that the small groups probably ranged widely throughout the entire region. It is also important to note that the Snake River Plain forms a natural east-west corridor for trade and travel and an area that must be traversed for north-south travel along the river valleys. As such, it was frequented by other groups as well as the Shoshone and Bannock Tribes. For example, the Nez Perce from northern Idaho frequently came into southeastern Idaho to trade and travel to the Great Plains.

The preceding description indicates that the INL area appears to have served as a natural corridor for the seasonal movements of the Shoshone and Bannock Tribes. Although there are no large winter villages reported in the area, some relatively large camps were observed by visitors. In the early 1830s, Warren A. Ferris encountered over 200 American Indians traveling near the three buttes and also reported a camp consisting of nearly 200 lodges on the Big Lost River (Ferris 1940, pp. 185 and 186). Natheniel J. Wyeth also reported American Indians camped near the Big Lost River (Wyeth 1899, p. 228). Although the INL area was probably not used as a wintering grounds, it seems certain that it was frequently visited, either in transit to other areas, as a destination for groups interested in obtaining obsidian from the Big Southern Butte or Howe Point, or for those attracted by food resources such as bison, which are reported to have existed in great numbers in the INL area (Haines 1969; Ross 1956; Work 1923).

A list of animals utilized by the American Indians of southeastern Idaho, as reported ethnographically (Shimken 1947; Steward 1938), would include all of the following and more: ants, badgers, bears, beavers, birds, bird eggs, bison, caterpillars, chipmunks, cicadas, crickets, deer, doves, eagles, elk, fish, grasshoppers, ground squirrels, marmots, mountain lions, mountain sheep, muskrats, owls, packrats, pronghorn, quail, rabbits, and sage grouse. The Shoshone and Bannock people also knew and utilized many plants for food and other practical purposes (Anderson et al. 1997). Indeed, it is likely that virtually every plant on the high desert was used in some way at some time of the year. Most, if not all, of these animals and plants continue to be available on or near INL and are still important to tribal members.

From approximately 1810 to 1850, the American Indians in southeastern Idaho remained

relatively undisturbed by the small groups of trappers, traders, miners, and emigrants who worked on or simply passed through Shoshone-Bannock territory on their way to California and Oregon. However, conflicts began to arise after gold discoveries and Euro American settlement in the 1860s. In the late 1860s, treaties were signed between the Tribes and the U.S. government in an attempt to reduce conflicts.

History: Euro American

From 1805, when Lewis and Clark explored what is now central Idaho, until gold was discovered in the early 1860s, exploration and development in southeastern Idaho was sparse, with the exception of early Mormon settlement. The socioeconomic development that was once dependent on trapping and the trading of fur became dependent on more abundant resources such as water, land, and minerals. Cattle and sheep were soon introduced, and while agriculture eventually became the leading economic force in southeastern Idaho as a whole, another resource–people–became instrumental in INL development.

Trapping and Fur Trading

Settlement of the American West owed itself, as much as anything, to a hat. The hat was made of a beaver pelt, and, during the 1820s and 1830s, no dedicated follower of fashion would settle for anything less (Reisner 1979). Therefore, it is no surprise that the first Euro Americans to explore the INL region were the trappers, also known as mountain men. In 1816, Donald Mackenzie organized the Snake River Expeditions to explore territory that includes what we now call INL. He was followed in 1823 by Antoine Goddin, who trapped beaver extensively in the Little Lost River region (Hammer 1967). Osborne Russell spent time on the eastern Snake River Plain in late 1835 and described in his journal (one of the more reliable for this time period) large buffalo herds, the three buttes, and the Lost River sinks (Haines 1969). In 1834, a trading and supply post, Fort Hall, was established south of INL's present-day boundary by Nathaniel Wyeth (Trego n.d.). Today, the remains of this early establishment are located within the boundaries of the Fort Hall Shoshone-Bannock Reservation.

While mountain men are generally credited with opening the door to settlement of the American West, it may be more accurate to say that they nearly slammed it shut. Indeed, the terrors they endured were hardly apt to draw settlers, and the written accounts they left had to weigh heavy on the settlers' minds. These accounts described arid plains that could support little more than wild bunchgrass; entire regions that alternated between fierce heat and stinging cold; incessant winds; streams that flooded a few weeks each year and went dry the rest (see Figure 13); hostile Indians, grizzly bears, and wolves; grasshopper plagues; hail, followed by drought, followed by hail; and flecks of precious metal that never panned out. Although they made it clear that it was possible to live off the land in better years, the life these rugged individuals led—that of trapper, hunter, fortune seeker—was not what the vast majority of American emigrants sought (Reisner 1979).

Figure 13. Big Lost River during seasonal storm and high water flow.

Emigrants

As promises of abundant land, game, rivers, ores, and agreeable climates in California, Oregon, and Washington spread to the east, a thin ribbon of civilization began to trickle out to the resource-rich west. This trickle eventually became a stream with the establishment of the Oregon Trail in 1836. In order to avoid Indian hostilities along the Snake River, Tim Goodale eventually established a northern extension of the Oregon Trail through the area along an established fur-trading route, and

emigrant wagons used it as early as 1852. A portion of Goodale's or Jeffrey's Cutoff (Dykes 1989; Idaho Historical Society n.d.; Merrill 1990) is still recognizable in the southwestern corner of INL (see Figure 14 and Figure 15).

Later, the cutoff was used for cattle drives from Idaho, Washington, and Oregon to shipping points in Wyoming. After heavy herd stock losses occurred in the 1880s, cattle drives were curtailed and seasonal sheep drives traversed the route.

Mining and Transportation

In the 1860s through the 1880s, discoveries of gold and other precious metals in central Idaho brought many miners, and boomtowns sprang up in areas just north and west of present day INL boundaries. These mid- to late-1800s mining booms created a need for transportation systems between the newly established mining towns north of INL, such as Mackay and Leadore, and their supply stations in older towns, such as Idaho Falls and Blackfoot further to the south. Freighting and staging became a major business, and a number of companies were formed in order to meet the demand for mining equipment, passenger service, dry goods, and other supplies. Old wagon roads and trails became stage and freight lines virtually overnight (see Figure 15), and several new trails were forged across the desert (Trego 1935).

Figure 14. Reenactment of an emigrant wagon train at Goodale's Cutoff.

Because of the freshwater springs that bubble from its slopes within the otherwise dry desert, the Big Southern Butte served as a stop for nearly all stage, freight, and later rail lines. Berryman and Rogers, Joe Skelton, and Henry Leatherman, three of the earliest freighters to cross the desert from Idaho Falls and Blackfoot to Arco, all used the Big Southern Butte as a way station (Olsen 1978; Trego 1928). In 1901, completion of the Oregon Shortline railroad between Blackfoot and Arco signaled the end of stage and freight lines in the area (Sedgewick n.d.). As horse-drawn wagons became obsolete, many drivers increasingly relied on small farms and ranches in the area.

Eventually, many of the mining boom towns folded when initial expectations of productivity in the surrounding mines were not realized (Bottolfsen 1926a).

One last minor boom occurred in 1925 when gold was discovered in the Lost River sinks, but within a month it was realized that the gold was in such minute quantities that extraction was economically infeasible (Crowder 1981; Olsen 1978).

Ranching

As transportation through the desert became more reliable, settlers began to make their way into the area. Many of these early occupants began ranching in the northern reaches of present-day INL. Sources report that there were six or seven ranches in operation on the Little Lost River and Birch Creek in 1882 (Edelman n.d.). Among these early cattlemen were:

- The Hawley brothers, whose descendents still operate a large ranch on the Big Lost River near Howe (Edelman n.d.)
- The Hollands, who also raised cattle near Howe and routinely ran their stock between there and the Big Southern Butte (Gerard 1982; Pettite 1977)
- Dave Wood, who maintained several ranches in the area, one of which was located on the Birch Creek sinks (Oberg 1970)
- Frank Reno, whose family still operates a ranch in the Birch Creek sinks area today (Edelman, n.d.).

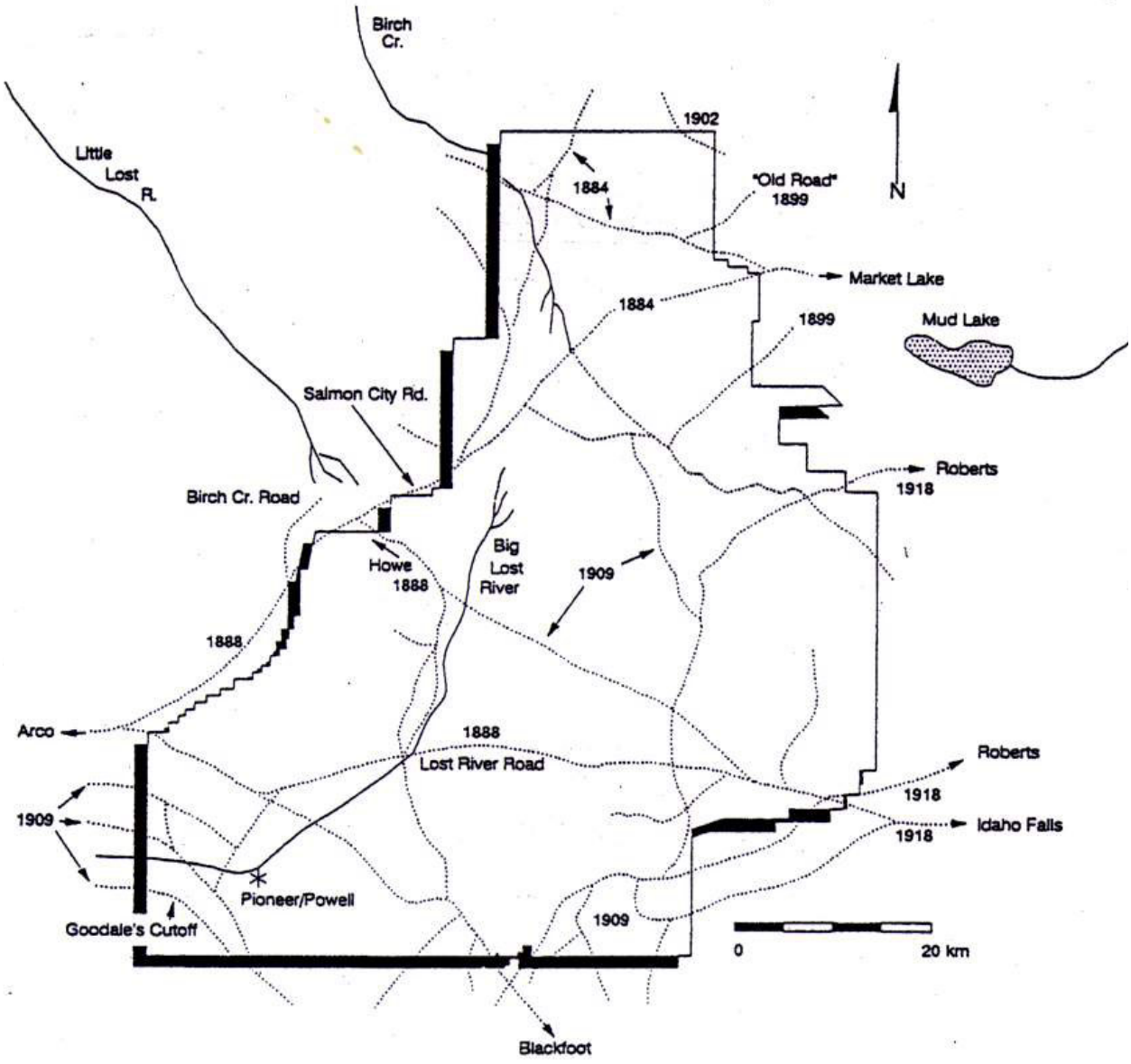

Figure 15. Historic INL trails with dates that indicate the year in which roads and trails were surveyed, not necessarily the year they were first used.

The disastrous winters of the 1880s killed so much stock that the local cattle industry never quite recovered, and sheep were moved into the grazing areas once dominated by cattle.

Major sheep drives across the INL area began in the 1860s, and the growth of this new industry paralleled that of the cattle industry (Wentworth 1948). As the demand for mutton and wool increased and sheep became a profitable commodity, many cattle ranchers added flocks to their cattle herds or completely switched to raising sheep. By the early 1900s, sheep were very common in the area and are still moved today from pastures near the Big Southern Butte across the INL area to Howe. Many of the isolated historic sites encountered within INL boundaries are remnants of the small temporary camps created by sheep and cattle drivers as they moved their stock through the region around the end of the 19th century.

Homesteading and Agriculture

While the northern portion of what is now INL was used primarily by ranchers, the western and northeastern portions were geared toward homesteading and agricultural pursuits. The first settlers in the area were members of the Mormon church who established residence near the northeastern boundary in 1855 (Clements n.d.). In these early days, farming was oriented toward family subsistence because transportation systems were not adequate to ship any supplies or produce in or out of the area. After freight and wagon lines became firmly established in the 1880s, settlers came to the area in larger numbers and began to farm for commercial as well as subsistence purposes.

Most of the homesteaders arriving in the late 1800s settled along the Big Lost River. The first permanent settlers arrived in 1878, and the first official water right claim was recorded in 1879 (Bottolfsen 1926b). Many settlers were prompted to move into the area by the Homestead Act of 1862, which allowed the head of a family to obtain 160 acres of land by residing on it and cultivating it for a period of five consecutive years. The Desert Claim Act of 1877 also encouraged settlement in the Big Lost River area by permitting families to acquire 640 acres of land if water could be brought to it (Bottolfsen 1926b).

Water was a rare commodity in the desert areas of the eastern Snake River Plain and the success of farming efforts in the area hinged on the homesteaders' ability to obtain it. With passage of the Carey Land Act in 1894 (Scott 1983; Williams 1970) and passage of the Desert Reclamation Act in 1902, the federal government stepped in to assist homesteaders in this endeavor. The 1894 act set aside one million acres of public land in Idaho for homesteading, provided the settlers participate in state-sponsored irrigation projects; and the 1902 act provided the funding necessary to reclaim these arid and semi-arid acres (see Figure 16).

Figure 16. Headgate from early 1900s irrigation project in the area now known as INL.

Southeastern Idaho was a major beneficiary of this federal aid and, as a result, the years from 1905 to 1920 saw a dramatic upswing in agricultural activity on land within and around the present-day INL boundaries. The population of Idaho Falls quadrupled from approximately 1,262 in 1900 to 4,827 in 1910, and this growth is directly attributed to the promise of irrigable land. Irrigation companies formed, and with financial backing by the federal government, proceeded to start construction on a number of dams, including the Mackay Dam on the Big Lost River upstream of INL, and canal projects that brought much-needed water to homesteaders (Pettite 1983). The town of Powell—later named Pioneer—sprang up along the Oregon Shortline in the southwestern portion of INL to supply local residents with necessary mercantile goods and serve as a stock-

shipping station (Gerard 1982; Schmalz 1963). Unfortunately, gross miscalculations of precipitation and water flow in the area coupled with ignorance of the fractured bedrock strata and porous gravels of the Big Lost River led to the failure and ultimate abandonment of all but a few of these projects in the 1920s (Pettite 1983; Staley 1978). Many of the small homesteads on and around INL were forced to fold, although a few notable exceptions in and around the Mud Lake area east of INL and far upstream in the Big Lost River valley continued to flourish. Many of the historic sites located within INL boundaries are representative of these short-lived efforts to reclaim the high desert for agricultural purposes (see Figure 17).

Figure 17. Historic artifacts from a failed homestead in the area now known as INL

History: 1942 to Present

In 1942, the U.S. Navy established a presence on what is now INL to test naval ordnance. After World War II, nonnuclear military munitions testing continued until the AEC acquired the former ordnance test area for development of a remote installation devoted to testing and developing nuclear reactor technologies. Prototypes of the nation's three commercial power reactor concepts—the pressurized water reactor, the boiling water reactor, and liquid-metal-cooled breeder reactor—were first developed and tested at this National Reactor Testing Station (now INL). Since its formation as the NRTS in 1949, basic research critical to design, safe operation, and licensing of nuclear power and propulsion reactors has taken place at INL.

Military Ordnance Testing

During World War II, the U.S. Naval Ordnance Plant was established in Pocatello, Idaho, as a place to manufacture, assemble, and reline Navy weapons. Nearly all of the naval ship guns used by the Pacific Fleet were eventually sent to the plant for relining. Before the guns could be shipped back for active duty, they had to be test fired to ensure that their aim was true. The Arco Naval Proving Ground (NPG) was established some 60 miles northwest of Pocatello as a remote place to test the guns for combat readiness. While operating during World War II, it was one of only six such facilities in the United States, and the only one capable of test firing the 16-inch battleship guns of the Pacific Fleet.

The Arco NPG included some 270 square miles of land along with infrastructure, including operational support facilities and housing for military and civilian personnel. This infrastructure is primarily located at what is today the INL Central Facilities Area (CFA), but also included rail lines for gun transport and downrange activities and various targets, spotting towers, and detonation areas. The Army Air Corps, flying out of Pocatello, also established two practice bombing ranges near the Arco NPG at this time, one located southwest of CFA and the other southeast (Braun 1996; Scientech Inc. 1993; Stacy 2000).

After the end of World War II, ordnance testing at the Arco NPG continued in the form of explosives storage and transportation tests. Structures were built and then loaded with explosives that were intentionally discharged to assess the effects to the structures and surrounding area of such explosions and to determine safe storage of military ordnance. One such test occurred on August 29, 1945, when approximately 250,000 pounds of powder explosives were detonated. It was the largest nonnuclear explosion up to that time (EG&G Idaho 1986). Craters and debris from this and other ordnance tests still remain on the INL landscape.

Between 1968 and 1970, during the Vietnam War, massive 16-inch naval guns were again heard on the Idaho desert (see Figure 18). A naval firing site, located southwest of CFA, was established and used for test firing the guns of the battleship New Jersey. Since AEC research facilities were then scattered throughout the original downrange area of the Arco NPG, the guns tested during at that time were aimed in the opposite direction. From the firing site located a few miles south of CFA, the guns were aimed southward across uninhabited territory toward the Big Southern Butte. Craters can still be found on the northern flank of the butte (Braun 1996; Coloff 1965).

Figure 18. Sixteen inch naval gun being tested at area now known as INL during Viet Nam era.

Arco NPG land and infrastructure were acquired from the Navy by the AEC in 1949 and formed the nucleus of the future INL.

Nuclear Science and Engineering

The federal government initially established INL as the NRTS in 1949. Its purpose was to provide an isolated location where prototype nuclear reactors could be designed, built, and tested. The Naval Proving Ground buildings acquired by the AEC became known as the Central Facilities Area. As its name suggests, CFA served as a centralized support services facility for the reactor testing operations, containing such jointly used services as a fire department, medical dispensary, cafeteria, crafts shops, and motor vehicle repair and maintenance facilities (Braun 1996). Since establishment of the NRTS, 52 "first of a kind" reactors have been constructed at INL.

The following contextual overview and the supporting text in Appendix F focus on major nuclear-era research and testing programs by facility area and is not intended as a comprehensive history. A more complete and definitive context, including an inventory of INL buildings administered by DOE-ID for post-1942 INL activities, can be found in the INL Historical Context Report (Arrowrock 1997). Additional detail is provided by a popular history of INL (Stacy 2000) and Historic American Engineering Record reports (Pace and Braun 2000; Stacy 1994, 1997a, 1997b, 1997c, 2005a, 2005b).

Experimental Breeder Reactor I. The first reactor built at INL, Experimental Breeder Reactor I (EBR-I), achieved initial criticality on August 24, 1951, and achieved many more historical firsts during its operational lifetime. On December 20, 1951, shortly after initial startup, the facility became the first reactor in the world to produce usable quantities of electricity. Subsequently, in 1953, EBR-I proved the concept that reactors designed to operate in the high-energy neutron range are capable of creating more fuel than is consumed (i.e., breeding). In July of 1963, EBR-I became the first reactor in the world to generate usable electricity with plutonium as the major fuel component and, later, also demonstrated the feasibility of using liquid metal as a reactor coolant. The reactor was decommissioned in 1964, named a National Historic Landmark in 1966, and opened for public visitation in 1975 (Braun 1994; INEL 1969) (see Figure 19).

Figure 19. EBR-1 National Historic Landmark.

Reactor Technology Complex. The first reactor built expressly for testing reactor core and fuel materials, the Materials Test Reactor (MTR) achieved startup on March 31, 1952 at the INL area now known as RTC (formerly the Test Reactor Area [TRA][2]). Experiments conducted at MTR influenced the choice of fuel elements and core structural materials for every reactor constructed in the United States since MTR startup. After more than 125,000 operating hours, MTR was finally shut down on April 25, 1970, and was formally decommissioned in 1974. Since that time, the MTR building has been maintained and used for office space and storage.

To enhance the nation's reactor testing capability, the Engineering Test Reactor (ETR) was completed in 1957, just a few hundred feet south of MTR at RTC. At the time of initial operation, ETR was the largest and most technically advanced materials test reactor in the world. Like the older MTR, the original ETR mission was to evaluate fuel, coolant, and moderator characteristics for future reactor designs. The demand for expanded and more technically advanced reactor testing capability was so great that even before ETR became operational, planning was underway for yet another, even more advanced test reactor at INL.

Construction on the Advanced Test Reactor (ATR) began in 1961, and at that time it was the largest single construction project ever undertaken in the state of Idaho. Located approximately 200 yards north of the old MTR reactor building, ATR began operation in 1967. ATR performed experiments similar to those conducted at the MTR and ETR facilities, with the U.S. Navy being the primary customer. While ETR was shut down for the last time in 1982 and now stands vacant, ATR remains in operation, still performing its materials testing mission. Since the 1950s, the RTC reactors have made vast and fundamental contributions to the development of nuclear science and engineering (Braun and Marler 1996; INEL 1969).

[2] Unless otherwise specified for historical purposes, the INL area originally known as TRA is primarily referred to in this section by its current designation of RTC.

Radioactive Waste Management Complex. To accommodate increasing amounts of radioactive wastes being generated by the new reactors, RWMC was established in the southwestern corner of INL in 1952. From 1954 to 1970, transuranic (TRU) wastes from the nation's national defense programs were disposed of in the RWMC's Subsurface Disposal Area (SDA) (DOE-ID 1996). In 1970, TRU wastes began to be stored aboveground in an expanded TRU waste storage area (INEL 1969). At the facility's Stored Waste Examination Pilot Plant (SWEPP), the TRU waste has been vented, examined, and certified for eventual disposal at a permanent national repository, such as the Waste Isolation Pilot Plant in New Mexico. The Advance Mixed Waste Treatment Project (AMWTP), which began operation in 2003, will expand the complex's waste management operations to include treatment of 65,000 cubic meters of INL low-level and TRU waste currently stored at the Transuranic Storage Area, and prepare the wastes for shipment out of Idaho. RWMC presently consists of the SDA, the TRU waste storage area, an administrative complex, and the operations zone. Although most of the above-ground structures were built after 1970, many of the buildings and features at RWMC are important for the role they have played in the development of radioactive waste management technology and for their illustration of shifting public attitude toward nuclear energy.

Naval Reactors Facility. Also in the early 1950s, work began at INL to develop reactor prototypes for the U.S. Navy. The initial power run of the prototype reactor (S1W) for the world's first nuclear submarine, the USS *Nautilus*, was conducted at INL on May 31,1953, proving that atomic propulsion of ships was possible (see Figure 20).

The U.S. nuclear Navy was born and, in 1958, a propulsion reactor prototype designed for use in surface ships (A1W) was also designed and built at NRF. The A1W prototype facility consists of a dual-pressurized water reactor plant within a portion of steel hull designed to replicate the aircraft carrier, USS *Enterprise*.

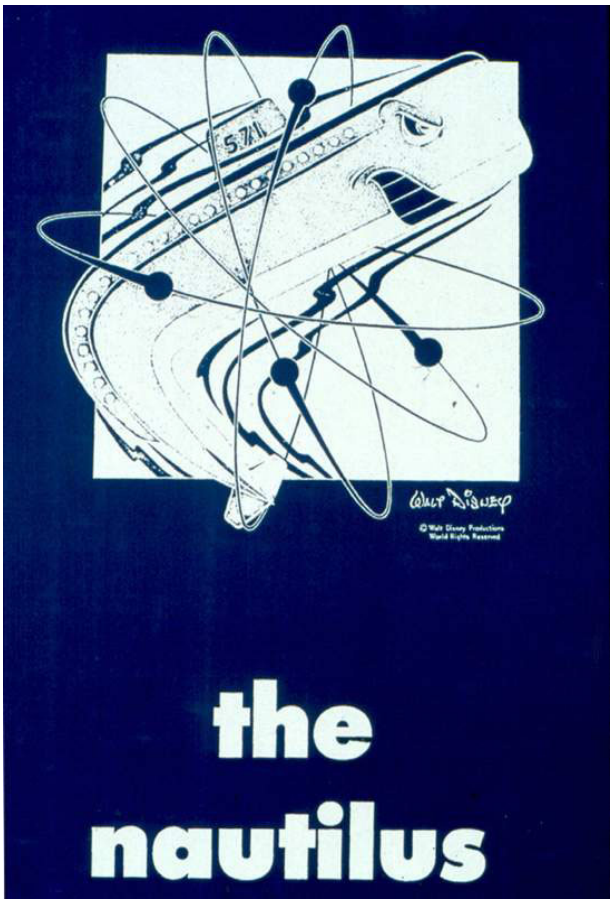

Figure 20. Promotional poster for the USS *Nautilus* nuclear-powered submarine program.

A1W was the first ship propulsion system designed to have two reactors providing power to the propeller shaft of one ship. Located immediately south of the A1W reactor building, the S5G reactor is a prototype pressurized-water reactor designed to operate in either a forced or natural circulation flow mode. Coolant flow through the reactor is caused by thermal circulation rather than pumps. The S5G prototype plant was installed in an actual submarine hull section capable of simulating the rolling motions of a ship at sea (INEL 1969). A historic context and building inventory assessment report that addresses the historical significance of NRF facilities has been completed under the direction of DOE's Office of Naval Reactors.

Boiling Water Reactor Experiment. In 1953, the first of five reactors was constructed at the Boiling Water Reactor Experiment (BORAX) area to prove the feasibility of reactors in which the coolant and moderator boils in the reactor core and passes steam directly to the turbine for power generation. The BORAX tests also attempted to demonstrate the efficiency of power production from this type of direct-cycle system. After BORAX I was deliberately destroyed in 1954 to determine this type of reactor's safety under extreme conditions, BORAX II was constructed in the same area for further safety parameter tests and to experiment with new core combinations.

The next reactor in the series, BORAX III, was built in 1955 to determine if boiling water reactors could generate power. The determination was made when BORAX III became the first reactor to light an American town (Arco, Idaho) on July 17, 1955.

BORAX IV operated from 1956 to 1958 and demonstrated the stability of ceramic cores of uranium-thorium oxide fuel elements. The last reactor in the series, BORAX V, produced superheated dry steam wholly by nuclear means for the first time in order to increase the efficiency of this type of design and reduce the costs of nuclear power.

Although no surface structures remain from the BORAX programs, there is no question of the importance they had in the development of reactor safety parameters and the nuclear power program (INEL 1976).

Test Area North. In the 1950s and early 1960s, the Aircraft Nuclear Propulsion (ANP) program was conducted at TAN (see Figure 21). During the course of this program, which was designed to prove the feasibility of nuclear powered aircraft, three Heat Transfer Reactor Experiments (HTRE-I,-II, and -III) were tested. Although no nuclear-powered aircraft were ever built, HTRE test results proved the feasibility of using heat from nuclear power to operate aircraft turbojet engines. Three additional low-power reactors were operated in support of this program; the Shield Test Pool Reactor, the Critical Experiment Tank, and the Hot Critical Experiment.

Following the development and success of the Intercontinental Ballistic Missile program and the

desire to pursue space exploration, the ANP program was terminated in 1961 by presidential Executive Order. Two prototype nuclear aircraft engines used in the HTRE tests are presently on public display near the EBR-I reactor complex. Although many of the structures associated with the ANP have either been demolished or stand vacant, the Hot Shop and ANP hangar designed to house prototype aircraft still exist and support current ongoing programs at TAN.

Figure 21. Aerial photo of the Contained Test Facility and ANP hangar at TAN.

Begun conceptually in 1962 soon after the ANP program ended, the Loss of Fluid Test (LOFT) program underwent numerous changes and redesigns before conducting its first nonnuclear tests at TAN in 1976. LOFT consisted of a series of simulated loss-of-coolant accidents. In 1978, the first nuclear tests began at the LOFT containment facility. The LOFT reactor was the only nuclear reactor in the world capable of repeatedly simulating loss-of-coolant incidents similar to those that might occur in commercial power reactors. In 1979, the LOFT scientists and reactor played a vital role in predicting activity within the Three Mile Island (TMI) reactor core as scientists struggled to manage and control the TMI reactor core meltdown. Successful testing continued at LOFT until 1982, when an international consortium took over operations and continued testing until 1986, when the program officially ended. The Water Reactor Research Test Facility (WRRTF), originally constructed to house reactor shielding tests associated with the ANP program, was reused during the LOFT program to conduct nonnuclear simulations of thermal-hydraulic features of commercial nuclear reactors. After a long history of significant contributions to nuclear science and engineering, many structures associated with LOFT and other, less significant programs now lack missions and have been vacated and demolished (INEL 1969; Stacy 1994) (see Figure 22).

Figure 22. Demolition of the WRRTF stack.

Idaho Nuclear Technology and Engineering Center. In 1953, INL's most important reactor support facility, the INL area now known as INTEC (formerly the Idaho Chemical Processing Plant [ICPP][3]), began the process of recovering and reprocessing unburned, enriched uranium from "spent" reactor fuel elements. INTEC was initially designed and built as a five-year demonstration facility, but the Cold War nuclear arms race led to an increased demand for nuclear fuel, and INTEC soon became a full-scale production facility (see Figure 23).

Spent reactor fuel elements were transported to INTEC to extract enriched uranium, which was then shipped to another national laboratory at Savannah River, Georgia, for use as fuel in reactors producing plutonium and tritium for nuclear weapons.

In addition to its groundbreaking work in fuel reprocessing technology, INTEC became a leader

[3] Unless otherwise specified for historical purposes, the INL area originally known as ICPP is primarily referred to in this section by its current designation of INTEC.

in the development of new technologies to manage nuclear wastes.

Figure 23. Aerial view of INTEC.

The waste calcining facility (WCF), developed at INTEC in the mid-1950s, transformed highly acidic radioactively contaminated liquid wastes into granular pellets that are much safer and easier to store until radioactive components in the waste are rendered safe through natural decay. INTEC calcining operations continued after WCF closure with its successor, the New Waste Calcining Facility (NWCF). Although fuel reprocessing at INTEC ended in 1992 and the final waste calcining campaign occurred in June, 2000, their contributions to the history of nuclear science have been significant. New missions at INTEC focus primarily on storage, manipulation, and disposition of spent nuclear fuel (INEL 1969; Pace and Braun 2000; Stacy 1997).

Army Reactor Area. Work began at the Army Reactor Area (ARA) in 1957 to develop compact, portable reactors to generate electricity in remote locations. This work culminated with one water-cooled reactor and two gas-cooled reactors, which were constructed at three of the four ARA sites (ARA-II, ARA-III, and ARA-IV). Support facilities, including a hot cell, were located at ARA-1, a nearby area south of ARA-II. In January 1961, an incident at the Stationary Low Power reactor (SL-1), located at the ARA-II facility, resulted in a steam explosion, leading to the first fatalities in U.S. history directly related to nuclear reactor operations.

After nearly nine years of operation, the Army program at ARA was terminated in 1965 due to reactor maintenance problems, an inability to define a current mission, and questions related to cost effectiveness. After the Army terminated their reactor programs, the name was changed to the Auxiliary Reactor Area and the remaining facilities were used for a few years in support of various other research programs. After standing vacant for several years, decontamination and dismantlement of the ARA structures began in 1993 (INEL 1962; Stacy 1997).

Critical Infrastructure Test Range Complex. In 1955, the INL area now known as CITRC was established as the Special Power Excursion Reactor Test (SPERT) area to implement the AEC's water-cooled reactor safety testing program. Four SPERT reactors were designed, built, and operated in the 15-year period between initial startup of SPERT-I on June 11, 1955, and final shutdown of SPERT-IV in 1970. The purpose of the SPERT reactors was to study a wide range of variables such as core configuration, plate design, coolant flow, and reflector moderator and temperature coefficients. In general, research was directed toward "runaway power," which was the major safety concern at that time.

Following shutdown of SPERT-IV, the SPERT area was renamed the Power Burst Facility in 1970[4] and SPERT-II, -III, and -IV were converted to the Waste Engineering Development Facility, the Waste Experimental Reduction Facility, and the Mixed Waste Storage Facility for the treatment, storage, disposal, and recycling of radioactive hazardous, mixed, and industrial and commercial wastes. These three facilities are co-located at the Waste Reduction Operations Complex (WROC).

The SPERT I reactor was demolished in 1985; however, at the CITRC area just north of SPERT I, studies continued on the effects of abnormal conditions on nuclear fuels (INEL 1969). After years of successful operation and failed attempts

[4] The PBF area in which the SPERT and PBF reactor facilities operated has been renamed CITRC. Unless otherwise specified for historical purposes, the area formerly designated as PBF is primarily referred to in this section by its current designation of CITRC. The SPERT and PBF reactor facilities within CITRC are referred to by their original designations.

to attract new programs, the PBF reactor at CITRC is presently being decontaminated and dismantled.

Materials and Fuels Complex). In 1953, the same year that Argonne's EBR-I proved the breeding concept, design began on the next generation of breeder reactors. It was planned that Experimental Breeder Reactor II (EBR-II) would serve as both a prototype for commercial breeder reactors and as a testing and development center for fuel reprocessing technologies. Construction began in 1961 at the INL area now known as MFC[5] (formerly Argonne National Laboratory-West [ANL-W]) (see Figure 24), and EBR-II achieved criticality in 1963. In 1964, the first fuels were reprocessed and the reactor began producing electricity. Eventually EBR-II produced enough electricity to provide power to the entire INL. The original design tests were accomplished by 1965, and the reactor was then used as an irradiation facility for the testing of reactor components. EBR-II was shut down for the last time in 1994. Other major reactor experiment facilities at MFC include the Zero Power Plutonium Reactor (ZPPR) and the Transient Reactor Test Facility (TREAT) (INEL 1969).

Figure 24. Aerial view of MFC.

In 1996, a building inventory and assessment of MFC was initiated while MFC was still operated by DOE-Chicago's contractor, the University of Chicago; however, that inventory and assessment have not been completed.

Miscellaneous Programs. Other reactor concepts tested at INL include the Organic Moderated Reactor Experiment (OMRE), constructed southwest of CFA and operated from 1957 to 1963. The OMRE was designed to test the use of liquid hydrocarbons as a coolant and moderator. After deactivation in 1963, the facility remained unused until 1977, when it was finally dismantled.

The Experimental Organic Cooled Reactor (EOCR) was built adjacent to the OMRE facility and was designed as a continuation of the OMRE studies. EOCR was approximately 90% complete when the program was canceled in 1962 and, though the reactor was in place, it was never brought to criticality (INEL 1969). The EOCR reactor building was subsequently used briefly for office space, then as a training facility for security forces when it was renamed as the Security Training Facility. After standing in the desert for 38 years, the EOCR facility was removed in 1999.

Current Operations

The LOFT facility at TAN was the last new reactor testing facility to be constructed at INL, and the years since the end of the LOFT program have seen a continuing decline in the reactor testing mission. New construction has tapered off in recent years, and much of that which has been done is directed toward the replacement of aging infrastructure. There has also been a correlative increased and accelerated emphasis on the deactivation, decontamination, and demolition (DD&D) of older buildings and structures.

ATR is the only DOE-ID reactor currently operating, and all other remaining INL reactor facilities are in various stages of shutdown and DD&D or awaiting new missions. Fuel processing and waste calcining at INTEC have ended, and the original Waste Calcining Facility and Fuel Reprocessing Complex have undergone or are undergoing DD&D. INL programmatic emphasis shifted away from reactor development and Cold War-related work toward hazardous and radioactive waste management, environmental

[5] Unless otherwise specified for historical purposes, the INL area originally known as ANL-W is primarily referred to in this section by its current designation of MFC.

cleanup, environmental technology development, and long-term environmental stewardship. The labor force at INL (including the NRF and MFC) peaked in 1992 with some 12,700 employees (Stacy 1999). In the intervening years the number of employees has steadily declined to a current total of approximately 6600. This dramatic reduction has resulted in much of the built environment now standing unused and vacant.

INL has recently been named lead DOE Laboratory for the development of the next generation of nuclear reactor technology and for the development and testing of Homeland Security technologies. In addition, INL management and staff are actively seeking and attaining new scientific research and engineering projects in governmental, private sector, and international arenas. As such, INL is presently in the early stages of coalescing into a revitalized national laboratory that plays a key role in the advancement of America's scientific and technological infrastructure.

IDAHO NATIONAL LABORATORY CULTURAL RESOURCE MANAGEMENT

This section summarizes the overall approach to managing cultural resources at INL. Topics include the effects of activities on cultural resources; overall management of cultural resources—identification, evaluation, and protection; and future priorities for the INL Cultural Resource Management Program. Appendices C and D complement this general description by providing strategies and procedures for the management of archaeological and historic architectural resources.

Past, Present, and Potential Effects of INL Activities on Cultural Resources

INL remains an active scientific facility where programs and projects are in constant change. Historically, INL missions have also varied tremendously, resulting in a variety of needs by multiple tenants and organizations. INL-related activities have had an undeniable impact on cultural resources of all types. In some cases, the impacts have been beneficial. For instance, restrictions on grazing and other public access for portions of INL have protected exposed surface artifacts at thousands of prehistoric and historic archaeological sites, and general maintenance activities and reuse have prolonged the life of many historic buildings and structures.

However, some impacts have been damaging to INL cultural resources. For example, at times reuse of buildings where historically important activities took place has meant the removal of original equipment and systems associated with those activities. In other instances, historic buildings have been demolished to eliminate or reduce maintenance costs and contamination problems or to make room for newer facilities, while archaeological sites and sensitive American Indian sites have been adversely affected by facility and infrastructure construction.

In general, the potential impacts to cultural resources at INL fall into the following categories:

- Natural forces (e.g., wind erosion, water erosion, flooding, range fires, rodent activity, and gravity)
- Vandalism (e.g., graffiti, unauthorized artifact collection, unrestricted offroad vehicle use, and neglect)
- Construction (e.g., facilities, roads, utilities, wells, landfills, borrow pits, fencing, trenching, and other structures that impact the landscape)
- Maintenance and renovation (e.g., scavenging equipment, neglect, and removal or alteration of historic features)
- Deactivation, decontamination, and dismantlement (e.g., asbestos abatement, landscape changes, and demolition of buildings and other structures)
- Habitat modification (e.g., spread of noxious and/or exotic weeds, flood control, fire rehabilitation, introduction of hazardous materials, artificial changes such as manmade ponds, and grazing)
- Contamination (e.g., radiological, industrial, and mixed waste pollutants)
- Operations (e.g., security activities, environmental monitoring, and cleanup)
- Emergency response (e.g. fire fighting and containment, and flood control).

Depending on facility missions over time, some activities tend to have greater cumulative impacts on cultural resources than others. At present, with the focus on accelerated INL cleanup, DD&D is the most significant activity in terms of impacts to cultural resources.

Shortly after initial passage of the National Historic Preservation Act in 1966 and the National Environmental Policy Act in 1969, INL began to incorporate cultural resource concerns into land use and management decisions. Today they are routinely considered as part of environmental compliance at the Laboratory.

Responsibility for Resource Management

Comprehensive planning is especially important for DOE because the agency manages large amounts of land distributed over a diverse geographic area. The wealth of cultural resources potentially impacted by activities on DOE lands is also diverse and region-specific. Because of the wide variety of its holdings, DOE-HQ has delegated primary responsibility for cultural resource management to local DOE field offices. DOE operations office managers, field office managers, and lead program secretarial officers assume primary responsibility for implementing cultural resource policies. At INL, the Environmental Technical Support Division of DOE-ID takes responsibility for oversight of the INL Cultural Resource Management Program through a designated cultural resources coordinator. The INL CRM Office, which is operated by DOE-ID's M&O contractor, is responsible for day-to-day cultural resource management at INL. This office is staffed with professional archaeologists and historians who meet secretary of Interior qualification standards or are closely overseen by staff who meet those standards.

Cultural resource concerns and responsibilities are also integrated into broader DOE objectives through a Cultural Resource Management Program based at DOE-HQ. Here, the DOE assistant secretary for Environment, Safety and Health; the director of the Office of Management and Administration; and the designated federal preservation officer are responsible for developing and coordinating cultural resource management and historic preservation policy and guidance with broad DOE impact. Other offices that provide policy and guidance of value in the cultural resources arena include the DOE Office of History and the assistant secretary for Congressional and Intergovernmental Affairs; the latter provides input concerning relationships with American Indian governments and other public interest groups.

Primary Activities of the INL Cultural Resource Management Office

Federal law directs that cultural resources be protected during daily operations (referred to as "non-impact" activities) and project planning and implementation (referred to as "impact" activities) on INL. These protective measures are to be "active" and include inventories, National Register nominations, site monitoring, scientific research, and public education. "Reactive" measures are also taken to maintain compliance with environmental requirements.

The INL CRM Office coordinates cultural resource-related activities at INL with oversight by the DOE-ID cultural resources coordinator. The activities of the INL CRM Office—set forth by law, regulation, and guidance—fall into three very broad cultural resource management categories; (1) identification, (2) evaluation, and (3) protection. The staff is also dedicated to sound overall management and resource maintenance or enhancement, and elements of these objectives infuse all INL cultural resource management efforts.

The overall mission of the INL CRM Office, as outlined in this plan, is to provide a professional approach to managing the cultural resources under DOE-ID's jurisdiction.

As such, INL cultural resources are managed in such a manner as to:

- Promote appreciation and awareness of the value and sensitivity of cultural resources on INL
- Encourage management accountability for INL cultural resources
- Achieve compliance with the spirit and intent of applicable executive and legislative mandates
- Foster innovative and cost-effective methods for taking cultural resources into early and careful consideration during INL undertakings in harmony with the overall DOE mission.

NHPA Section 110 Goals

NHPA Section 110 requires federal agencies to ensure that their procedures, with regard to NHPA Section 106, are consistent with regulations and guidance issued by the Advisory Council (NHPA Section 101). Federal agencies must provide a process for the development and implementation of agreements to guide the consideration and mitigation of adverse impacts to historic properties under their jurisdiction.

Section 110 also directs federal agencies to consider using historic properties, whenever feasible, prior to constructing, leasing, or buying new properties. It further directs that preservation-related activities, and all other activities that may impact historic properties, be carried out in consultation with other federal, state, and local agencies; American Indian tribes; and the general public. Finally, it directs federal agencies to establish preservation programs to identify, evaluate, and nominate properties under their jurisdiction to the National Register and to maintain and manage such properties in a manner that considers their preservation.

DOE is committed to a comprehensive cultural resource management approach that addresses all cultural resources at INL, regardless of the potential for adverse effects to them. The general processes described in this section summarize DOE's management approach and goals to enhancing resource preservation.

Identification

Efforts to identify cultural resources have been ongoing at INL for more than three decades. Appendices H and I provide lists of the cultural resources that have been identified during this time, organized according to resource type. Every year more resources are added to this inventory through two basic processes. In one process, resources are inventoried for purposes of long-term planning and compliance with provisions in the National Historic Preservation Act and the Archaeological Resources Protection Act that require federal agencies to ultimately locate and evaluate the cultural resources on lands under their jurisdiction. In the second process of identification, cultural resources that may be subject to impact as a result of INL activities are inventoried.

Methods for identification of cultural resources at INL vary according to the type of resource under consideration. For the most part, archaeological sites are identified through systematic pedestrian surface survey in most INL areas. Historic architectural properties, structures, and objects generally exhibit some type of surface manifestation as well, but not always; and INL archives are often consulted to identify these cultural resources. Direct communication is necessary to identify and characterize most American Indian cultural resources such as sacred sites or traditional use areas at INL. Even in areas that are widely recognized as sensitive to the Shoshone-Bannock Tribes, detailed inventory of the resources of potential concern and importance is impossible without tribal input.

DOE-ID's commitment to locating cultural resources at INL is critical to long-term stewardship of cultural resources. The archaeological sites, historic architectural properties, traditional cultural areas and sacred American Indian sites scattered over the entire Laboratory cannot be understood in isolation. All are part, and only part, of larger human systems adapted specifically to the high-desert landscape through several distinct time periods. Since the area is so large and its cultural history so complex, effective stewardship is only accomplished through an ongoing program of resource identification and incorporation of the resulting information into contexts and research designs.

General cultural resource identification efforts are also important for overall land-use planning. In this case, surveys can be targeted in areas where there are special concerns, such as:

- Zones that are subject to high levels of natural erosion where cultural resources may be subject to unmitigated impact
- Areas that are targeted for environmental cleanup
- Areas where future development may occur

- Areas that are poorly understood and under-represented in existing cultural resource inventories
- Areas that hold promise for development to enhance public understanding of INL's cultural resources.

For these types of identification efforts, it is appropriate to target specific types of cultural resources, such as scientific equipment or important American Indian plants, or any other resource that is poorly understood. The goal of every effort is enhanced understanding of the resource base.

Predictive modeling can further enhance the value of existing cultural resource inventories for land-use planning by providing information on the expected density and distribution of resources in areas that have not been surveyed. This information can be useful for planning future DOE activities to minimize damage to cultural resources. At facilities like INL, with significant land holdings and numerous cultural resources, this type of predictive modeling effort is a valid way of working to satisfy the statutory requirements for 100% inventory of DOE-ID cultural resource holdings.

Research. There are two primary approaches to conducting cultural resource research on INL:

1. Develop strong research-based relationships with universities and provide support to other non-INL historical and archaeological research based on qualified and valid proposals. Work to develop joint funding proposals in areas of mutual interest and benefit with these external entities and join in the solicitation of support for research that fills gaps in the understanding of INL cultural resources.
2. Explore ways to optimize basic cultural resource research goals through the required compliance activities that demand most INL CRM Office resources. This can be done by conducting information-gathering activities under an umbrella of thoughtful research designs (see Appendix E) and historical contexts (see Appendix F). In this way, sufficient and sophisticated information can be gathered, and time and funding can be used optimally. This approach allows recovery of the basic data needed to describe, characterize, and protect INL cultural resources while maintaining legal compliance and contributing to the scientific information base.

Unanticipated Discoveries. Even after advance surveys and other identification efforts, cultural resources are occasionally identified unexpectedly during implementation of INL projects. This is particularly true for archaeological and paleontological sites, which may have little or no surface manifestation; but important historic objects and records may also be discovered during a project.

The INL Stop Work Authority provides mechanisms for protecting inadvertently discovered cultural materials from further damage. Through training, all INL employees are informed of their right and indeed, their obligation, to stop any work process that could adversely impact safety or the environment, including exposing or threatening resources of cultural importance. Employees are also generally encouraged to contact the INL CRM Office informally whenever they have questions or concerns about cultural resources or if they find something they think may be of interest. As a final check for archaeological resource protection, environmental checklists that cover activities involving ground disturbance also include reminders of the INL Stop Work authority.

When INL employees suspect sensitive cultural materials have been uncovered or previously identified cultural resources are being subjected to unanticipated impacts, they are trained to stop or redirect their activities and immediately contact the INL CRM Office. When contacted, the INL CRM Office will advise the employee to establish a 30- to 50-meter protective buffer around the exposed archaeological or paleontological materials or to isolate the significant record or object. The DOE-ID cultural resources coordinator will be contacted and will schedule a site visit to evaluate the situation within two working days of the discovery. Once notification has been made through the INL CRM Office, the DOE-ID cultural resources coordinator

will, in turn, notify other interested parties as the situation demands. For all archaeological sites, interested parties will include, but not necessarily be limited to, the Advisory Council, Idaho SHPO, and Shoshone-Bannock Tribes. An invitation to consult on the resolution of adverse effects to the identified resource and participate in any associated activities will be included with this notification. Within two working days of the notification, interested parties will be asked to inform the DOE-ID cultural resources coordinator of their intentions to participate. When human remains are included in the find, the DOE-ID cultural resources coordinator will also notify the appropriate county sheriff's office.

Emergency Situations. Another means of identifying cultural resources at INL is through inventories and assessments completed in response to emergency situations. Emergency response activities are those activities declared by the U.S. president, a tribal government, or the governor of a state, as necessary to safeguard human health and the environment during declared disasters, emergencies, or national security threats. Emergencies at INL may be caused by either natural or manmade events.

During emergency situations at INL, no actions necessary to preserve human health or property will be delayed to comply with historic preservation requirements. However, INL emergency responders can carry on the spirit of the mandates by consistently trying to minimize the overall impact of their activities. Emergency responders are also reminded that activities completed in anticipation of emergency situations (flood control, controlled burns, etc.) and those conducted after termination of the emergency are not exempt from cultural resources review.

Although activities conducted in the midst of an INL emergency are exempt from cultural resource review and consideration, the aftereffects of those activities must be evaluated. As soon as conditions allow after an emergency has ended, the INL CRM Office conducts archive searches and field inventories, as appropriate, to evaluate the scope of impact to cultural resources. Once the scale of impact is determined, consultation is initiated with the Idaho SHPO, Shoshone-Bannock Tribes, and other interested parties and stakeholders to develop strategies for any needed mitigation.

Evaluation and Nomination to the National Register of Historic Places

Evaluation of INL cultural resources for nomination to the National Register involves determining the significance of those resources. Methods for determining the significance of cultural resources at INL play an important role in both long-term planning and project-specific impact assessments. Regulations promulgated by the National Historic Preservation Act provide a general approach for evaluating significance. According to 36 CFR 60.4, "Criteria for Evaluation":

> "The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. That have yielded, or may be likely to yield, information important in prehistory or history."

In addition to meeting one or more of the aforementioned criteria, properties at INL must possess integrity in order to be eligible to the

National Register. Integrity is defined as (Advisory Council 1991):

> *The authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic…period. If a property retains the physical characteristics it possessed in the past, then it has the capacity to convey association with historical patterns or persons, architectural or engineering design and technology, or information about a culture or people.*

Integrity has seven qualities that apply to historic architectural properties:

1. Location
2. Design
3. Setting
4. Materials
5. Workmanship
6. Feeling
7. Association, which is the "direct link between a property and an event, or person…for which the property is significant…and is sufficiently intact that it can convey that relationship" (Advisory Council 1991).

A property normally must meet at least two of the seven qualities to be eligible for the National Register.

Clearly, some important cultural resources at INL will not meet any of the evaluation criteria or will lack sufficient integrity. For instance, the significance of a traditional cultural area lies with those who have traditional ties there and can only be established by communicating directly with them. Another example is the presence of many architectural properties that, though they are less than 50 years old, have exceptional significance and are, hence, eligible for listing on the National Register. Therefore, while the National Register criteria are useful, they are not necessarily used alone in the process of evaluating significance at INL. (Appendix E contains research designs for evaluating INL archaeological properties and Appendix F contains historic contexts for INL architectural properties.)

Significance evaluations play an important role in identifying cultural resources that should be protected from impact during INL-sponsored activities. These evaluations are also an important part of general cultural resource management activities at INL. Significance is documented through data collection and established within the framework of historic contexts and research designs developed for each type of cultural resource known at INL. Some properties exhibit characteristics that make them eligible for nomination to the National Register of Historic Places, while others do not, but they are no less important in the overall management scheme.

INL's first reactor facility, EBR-I, is listed on the National Register as a National Historic Landmark, and DOE-ID intends to nominate other properties in the future. Possible strategies include nomination of:

- Multiple historic buildings and structures
- The nuclear powered jet engines presently on display at the EBR-I complex
- Goodale's Cutoff of the Oregon Trail
- The Middle Butte Cave rock art site and traditional cultural area.

National Register nominations require detailed documentation in a format specified by the National Park Service. Data collection is often necessary to accumulate the required information. Methods for collecting data to meet eligibility requirements vary for archaeological sites, historic architectural properties, and traditional use or sacred areas. For archaeological sites, data necessary for nomination may be collected via:

- Surface mapping
- Artifact collection, when necessary for research purposes or to protect cultural resources
- Test excavations
- Laboratory analyses.

Information in local archives and repositories may also be of value in understanding archaeological sites and historic architectural properties from the historic period. Information on resources from the more recent past is also available from current and former INL employees and in archival form, including collections that are housed and maintained at INL.

Finally, information on traditional use areas and sacred sites, beyond general statements about large regions and features, is only available through communication with the local land users.

Protection and Preservation

Elements of resource protection and preservation are included in every aspect of the Cultural Resource Management Program. The paragraphs to follow include descriptions of program elements that are part of long-term planning and the overall management goal of maintaining resource preservation.

Monitoring. The purpose of the comprehensive sitewide monitoring program is to identify, track, and reduce impacts to known cultural resources throughout INL. The INL CRM Office conducts monitoring activities for DOE-ID to determine the effectiveness of DOE-ID policies and to safeguard cultural resources from destruction and deterioration caused by natural or human processes. Each year, the INL CRM Office selects a few locations for monitoring based on such factors as relative importance of the resource, ease of public access, history of adverse effects, and proposed work in the area. INL monitoring forms are completed and a report submitted to DOE-ID, who then undertakes appropriate actions to address findings following the process outlined in the INL Monitoring Plan in Appendix L.

The INL CRM Office staff has conducted monitoring of several historic architectural properties and has identified impacts to resources. INL management has been notified of the impacts and is becoming increasingly aware of the need to address these issues.

Another key ingredient of the sitewide monitoring program is an active security force, which monitors the INL area via ground patrols and security surveillance of public points of access. When encountered, trespassers are removed immediately. Largely as a result of these restrictions, many archaeological sites on INL are relatively undisturbed. In addition, vandalism of cultural resources seldom occurs because of their location in a secured area.

The INL CRM Office has notified INL security forces when discovering unlawful intrusions during archaeological site monitoring, which resulted in increased security patrols in some areas and the placement of additional "No Trespassing" signs in others. In other instances gravel barriers have been established to prevent stream erosion on highly significant archaeological locations, and barriers have been installed to prevent unauthorized access.

Cultural Resource Management Archives. Archival systems are created to protect, conserve, and make available information of value. The INL cultural resource management archives include a library of cultural resource investigations at and around INL and comprehensive databases and forms for cataloging cultural resources. Presently, the databases contain administrative, locational, and descriptive information and archaeological data that are tied to the geographical information system (GIS) in use at INL. Regular updates to the databases and GIS files ensure that archive searches and ongoing survey efforts are based on the most current information. A new electronic system integrates the cultural resource archives into a single system that is easy to use and maintain. This electronic system enhances the usefulness of the archives; however, it does not replace the hardcopy cultural resource investigation records. These archived materials are stored in the INL CRM Office. Duplicates of these hardcopy records are also maintained to a large extent at the Idaho SHPO and, for archaeological sites, at the Southeastern Idaho Regional Curatorial Center in the Idaho Museum of Natural History, Pocatello, Idaho.

Confidentiality. Archaeological records, such as those preserved within the INL CRM Office archives, are exempt from the Freedom of Information Act and are released on a strict need-

to-know basis. At INL, this information is recognized as "sensitive unclassified information" that can be distributed for "official use only." The restrictions on distribution of archaeological site information are designed to protect these sensitive resources from looting and vandalism. Similar safeguards are also extended to all known American Indian cultural resources on INL.

To meet the criteria for confidentiality established by law (ARPA, NHPA, American Indian Religious Freedom Act [AIRFA]) and by DOE directives regarding sensitive unclassified information, the INL CRM Office limits the circulation of detailed maps and site locational information. When not in use, this information is maintained in files in the INL CRM Office. When it is provided to INL project managers who need it for planning purposes, it is clearly labeled for "official use only." Reports that are placed in public reading facilities as part of the NEPA review process are also carefully screened to remove all detail on resource location.

In contrast to archaeological and sensitive tribal resources, the locations of historic architectural properties are widely known by INL employees and the general public. However some restrictions on the distribution of information have recently been established in response to national terrorist alerts.

Curation. DOE is responsible for all artifacts and samples collected from INL and for their supporting documentation and must curate them in a repository that meets federal standards issued under 36 CFR 79, "Curation of Federally-Owned and Administered Archaeological Collections." This is an ongoing responsibility as collection of artifacts and samples is expected to continue as part of the overall INL Cultural Resource Management Program. Those collections that have already been made are located at the Southeastern Idaho Regional Archaeological Center in the Idaho Museum of Natural History on the Idaho State University campus in Pocatello, Idaho, and are managed according to terms expressed in a curation contract. Identification of post-1942 artifacts is conducted by a team comprised of INL CRM Office professionals and knowledgeable scientists and engineers. Once identified, the artifacts are tagged with information, such as year made and associated program, entered into the INL historical database, and moved to interim storage. Identification of a curation facility for post-1942 artifacts is a goal that will be implemented in consultation with the Idaho SHPO and other interested parties. Procedures for curation and disposition of post-1942 artifacts will also be drafted to guide artifact curation.

Permitting. Most cultural resource investigations at INL are conducted in-house through the INL CRM Office. This group is staffed with professionals who meet the qualification standards contained in 36 CFR 61, "Procedures for Approved State and Local Government Historic Preservation Programs." Investigations by outside agencies, universities, or subcontractors are tracked and coordinated through the INL CRM Office where records are also maintained.

Reuse. A culture of reuse of government properties at INL began in 1949 with AEC's acquisition of the World War II Naval Proving Ground and associated infrastructure, including architectural properties, for its reactor development and testing program. Although property reuse has continued to be an option to the present day, the waning early nuclear mission, combined with increasing environmental concerns beginning in the late 1960s, have resulted in mixed success for this endeavor.

Reactor development and new construction at INL peaked in the late 1960s, and INL contractors began to seek external programs and customers to reuse existing INL architectural properties. A program known as "Work for Others" trained and encouraged employees to market INL staff and property capabilities to a wide variety of other government agencies and private businesses. As a result of this marketing effort, some INL employees worked on external programs for agencies such as the Department of Defense, and several INL structures were reused. For example, a large hangar located at TAN is now used by the U.S. Army for its Abrams tank armor project.

In addition to active marketing efforts, a program was developed to identify "excess" INL architectural properties that were no longer needed

and to screen those properties for reuse by all federal agencies. However, in addition to reuse, there also exists a need to clean up "legacy" waste left by past processes and, by the late 1980s, compliance with environmental laws and regulations became DOE's paramount concern. In the early 1990s, many of the "Work for Others" programs and customers were gone and DOE transferred INL landlord responsibilities, including the management of INL architectural properties, from reactor development to environmental remediation and, later, to environmental management (Stacy, 2000 and personal communication with Ken Moor).

The mission of the Environmental Management Program is to treat and/or remove INL hazardous, radiological, and mixed wastes and identify contaminated architectural properties for DD&D. Properties identified as contaminated include those that contained materials such as asbestos, petroleum products, acids and bases, radionuclides, unexploded ordnance and explosive residues (see Figure 25), polychlorinated biphenyls (PCBs), and heavy metals (Arrowrock, 2003). Although this meant that virtually all historic INL buildings and structures were slated for DD&D, internal and external opportunities for reusing them continue to be pursued.

Figure 25. Unexploded Naval depth charge found at INL.

In 2002, the secretary of Energy designated INL as DOE's lead laboratory for the development of the next generation of nuclear reactors and, at the same time, accelerated environmental cleanup. Landlord responsibilities shifted from environmental management to DOE's Nuclear Energy Program and, in 2003, a transition team was formed to identify properties to transfer to the Nuclear Energy Program for continued use or reuse. This effort is ongoing and is intended to remain flexible as the new nuclear mission and necessary funding evolve and new customers and uses for some properties are identified, while the potential for reuse of other properties fades.

Stakeholder Communication

Both the NHPA (36 CFR 800.8) and NEPA, along with various executive orders and DOE policies, require stakeholder communication and systematic planning as the key to their successful implementation. Systematic planning for public participation in INL cultural resource management helps DOE ensure that such participation takes place in a productive manner. It further helps ensure that the public's interests regarding resource preservation and interpretation is considered as INL executes its primary missions.

The list of stakeholders and potential stakeholders is as varied as the resources themselves, including such diverse groups as local historical societies, museum associations, Oregon Trail enthusiasts, INL retirees, historical and scientific researchers, American Indian tribes, and the general public. These diverse stakeholders are involved at appropriate levels and at appropriate times, including during an annual meeting to discuss recent and future activities regarding protection of INL cultural resources.

Effective identification and management of diverse cultural resources, such as American Indian cultural and traditional sites and one-of-a-kind reactor facilities, that are of importance to living people requires well-planned communication with these stakeholders. The values and concerns associated with these resources cannot be understood unless the people who use and value them place them in appropriate context. Groups such as the INL Retirees Association, local and state historical societies, and professional organizations provide insights and information relevant to the management and disposition of post-1942 historical resources.

American Indian Interests. As a federal agency, DOE recognizes its trust responsibility to the Shoshone-Bannock Tribes. In the spirit of that responsibility, DOE-ID has been active in outreach efforts with the Tribes. This has facilitated ongoing communication to identify and protect significant tribal resources at INL. A signed agreement in principle (AIP) with the Shoshone-Bannock Tribes (DOE-ID 2002) commits DOE-ID to conducting INL activities in a manner that protects the health, safety, environment, and cultural resources of the Tribes and outlines efforts to help the Tribes maintain economic self-sufficiency (see Appendix B).

Cultural resource protection is an important part of the AIP and is coordinated through the INL Cultural Resources Working Group (CRWG) with membership from the Tribes, DOE-ID, and the INL CRM Office. This group meets regularly to address issues and opportunities in a timely manner and in an environment of mutual respect. Recurring topics of discussion include cultural resource protection, Native American Graves Protection and Repatriation Act (NAGPRA) consultation, educational outreach, and overall management of INL cultural resources, particularly American Indian sacred areas.

Tribal input is actively solicited for new and ongoing INL projects, and working guidelines developed by the CRWG facilitate these interactions. Under these guidelines, a designated tribal point-of-contact receives quarterly reports on INL CRM Office activities that address resources of importance to them and is regularly informed of field projects. Invitations to comment on, visit, observe, and/or assist in any of the described activities are implicit in all communications. If required by law or requested by the Tribes, formal consultation may follow at any time. The holistic view regarding cultural resources and cooperative spirit embodied in this group are designed to enhance understanding and appreciation of all types of cultural resources within the INL community and the Tribes.

Ongoing communication and consultation with the Shoshone-Bannock Tribes on cultural resource matters through the CRWG has resulted in the identification of several major areas of interest. In general these are:

- Protection of the integrity of archaeological sites and objects
- Treatment of archaeological sites and objects during impact assessments and scientific research
- Protection of the environment and landscape that houses prehistoric resources, traditional cultural places, and sacred sites
- Treatment of human burials and burial items
- Return of cultural patrimony and human skeletal remains (i.e., repatriation)
- Access to, free use of, and protection of traditional cultural places and sacred sites.

A variety of procedures has been developed and activities are conducted by the INL CRM Office and DOE-ID to address the aforementioned areas of interest (see Appendix B for details). For example, the Tribes are involved in the protection and treatment of archaeological sites through the INL CRM Office's routine transmittal of quarterly activity reports, archaeological survey reports, and other environmental documents. In the future, this communication should also help in the identification and ultimate protection of other types of resources that are of importance to the Tribes. The CRWG Communication Protocol also outlines a general process by which the Tribes are immediately brought into consultation whenever human remains are discovered at INL. Plans to be developed in the future will guide repatriation of significant cultural items to the Tribes for culturally appropriate disposition. Finally, the Middle Butte Cave Agreement signed between DOE-ID and the Tribes maximizes tribal access to an important INL cultural area within the limits of safety, health, and national security.

INL Archives. INL support service organizations have primary responsibility for the retention and preservation of INL records and perform these responsibilities using National Archives and Records Administration guidelines and DOE and federal records disposition schedules. INL archives hold photographic negatives and

architectural and engineering drawings dating from the 1940s, extensive library holdings that include technical and nontechnical reports and documents, and other historical INL documents that are maintained in the INL records storage building and technical library. Many of the unclassified holdings are also available to employees through the INL Intranet system and may, with permission, be made available to non-INL researchers and scholars.

A comprehensive INL Archival Management Plan is being finalized and will be used to identify and archive important, irreplaceable information and record artifacts. As an essential foundation for the dissemination of information about INL history, past programs, and associated structures and artifacts, these archives, along with those managed by the INL CRM Office, will be made available to INL employees, stakeholders, and the general public.

Training and Public Outreach. Training and public outreach are essential cultural resource management activities with the following two compatible goals:

1. Inform people about local history and prehistory and recruit participation in cultural resource preservation
2. Inform people about the letter and intent of the laws protecting cultural resources and make them aware of the penalties for their violation.

Training—The INL CRM Office holds training sessions with INL project managers, environmental coordinators, and others as applicable, to increase knowledge, awareness, and appreciation of INL cultural resources, requirements for historic preservation, and their responsibilities to comply with these requirements.

The INL CRM Office has featured articles and photographs in INL publications and other external publications to highlight important historic INL events, persons, artifacts, and INL CRM Office activities. INL CRM Office personnel have also conducted training activities such as mentoring college students and educating local high school students and teachers working at the INL as members of Science Action Teams.

Public Outreach—Access to an INL facility for educational and interpretive purposes began in 1975 with the opening of the EBR-I National Historic Landmark Visitors Center. The goal of this interpretive program is to educate the public about INL history and science in general. Grants have been secured to preserve the EBR-I structure and to update its exhibits in partnership with the "Save American Treasures" Program, Murdock Trust, Idaho Heritage trust, and Museum of Idaho located in Idaho Falls.

INL CRM Office staff have also developed many effective tools to enhance knowledge of INL resources and promote cultural resource protection. Forums for such discussions include national, regional, and local professional conferences where facility history, archaeological research, and management strategies and tools are explained and shared. In addition, in 1999, a public history was prepared to commemorate INL's 50th anniversary. This book was widely distributed to INL employees and to libraries and schools.

Other efforts are oriented toward members of the general public in communities surrounding INL. Tours of INL cultural resource sites have proven to be an especially popular and effective means of educating and communicating with the public (see Figure 26).

Figure 26. Tour of archeological and historical sites at INL.

Throughout the year, INL CRM Office staff also visit many local schools and civic groups to give presentations on a wide variety of topics. Presentations are tailored specifically for different audiences and have included regional prehistory

and history, nuclear history, careers in archaeology and history, cultural resource management and compliance, archaeological resource protection, artifact illustration, and American Indian resources and sensitivities.

Partnerships with local museums, interpretive societies, historical societies, and the Idaho State Tourism Office have resulted in an expansion of the Public Education and Interpretation Program at the EBR-I Visitors Center. The center now includes interactive displays, educational videos, traveling exhibits, and outdoor classrooms. The INL CRM Office plans to continue this expansion at EBR-1 with additional interpretive and educational tools, such as a nature trail (Braun and Marler, 1999). These partnerships will continue to educate residents and visitors about INL history; they will also be the driving force behind the nomination of Highway 20 from Idaho Falls to Arco and Highways 22 and 33 along INL's north and west boundaries as scenic and historic byways. Roadside signs may then be erected to describe historic INL activities and the properties associated with them. A final outreach-related goal is to develop a broad, ongoing oral history program to capture important first-hand stories about INL land use and history.

Specific Future Activities and Priorities

In addition to the general cultural resource management goals described throughout the preceding text, there are a number of specific activities that could be enhanced or initiated to achieve those goals. Proposed future activities will be prioritized in the INL CRM Office annual work plan based on input from the Idaho SHPO, Advisory Council, Shoshone-Bannock Tribes, and other stakeholders. A list of recurring activities, specific FY-05 activities, and proposed future activities is provided in Appendix K.

NHPA Section 106 Process

Timely and consistent consideration of cultural resources in the day-to-day operation of INL is one of the most basic goals of cultural resource management at the Laboratory. It is also a requirement of NHPA Section 106, which requires federal agencies to consider the impact their activities will have on properties that are either listed on or eligible for listing on the National Register, and to afford the Advisory Council ample opportunity to comment on the proposed activities. Such consideration and comment are to be completed prior to initiation of the activities.

The NHPA Section 106 process is the legal mechanism used to determine if adverse effects to historic properties will occur, and if so, the nature and extent of the adverse effects, and to consult with the Idaho SHPO and other interested parties to develop strategies to mitigate those effects. Legally, the consulting parties have 30 days to review and comment at each step in the process. Figure 27 illustrates the Section 106 review process.

Since only 7 to 8% of the 890-square-mile reserve has been inventoried for archaeological resources and only DOE-ID-owned buildings have been inventoried within the built environment, DOE-ID must also ensure no cultural resources are inadvertently destroyed, transferred, or altered during ongoing operations. Both of these related concerns are met through a cultural resource review process that requires INL CRM Office involvement whenever a project is proposed that meets any of the following thresholds:

1. Ground disturbance outside the boundaries of fenced INL facility areas or within 50 ft of existing buildings or landscaped areas within unfenced facility areas
2. Demolition, major structural or landscape modification, or permanent closure of extant buildings and structures and/or removal of original equipment, features, or records
3. Any activities that may affect the EBR-I facility area, a National Historic Landmark
4. Any ground disturbance within or around CITRC, where sensitive cultural remains have been inadvertently discovered in disturbed and undisturbed contexts
5. Any activities proposed for known or suspected zones of American Indian sensitivity and high resource density.

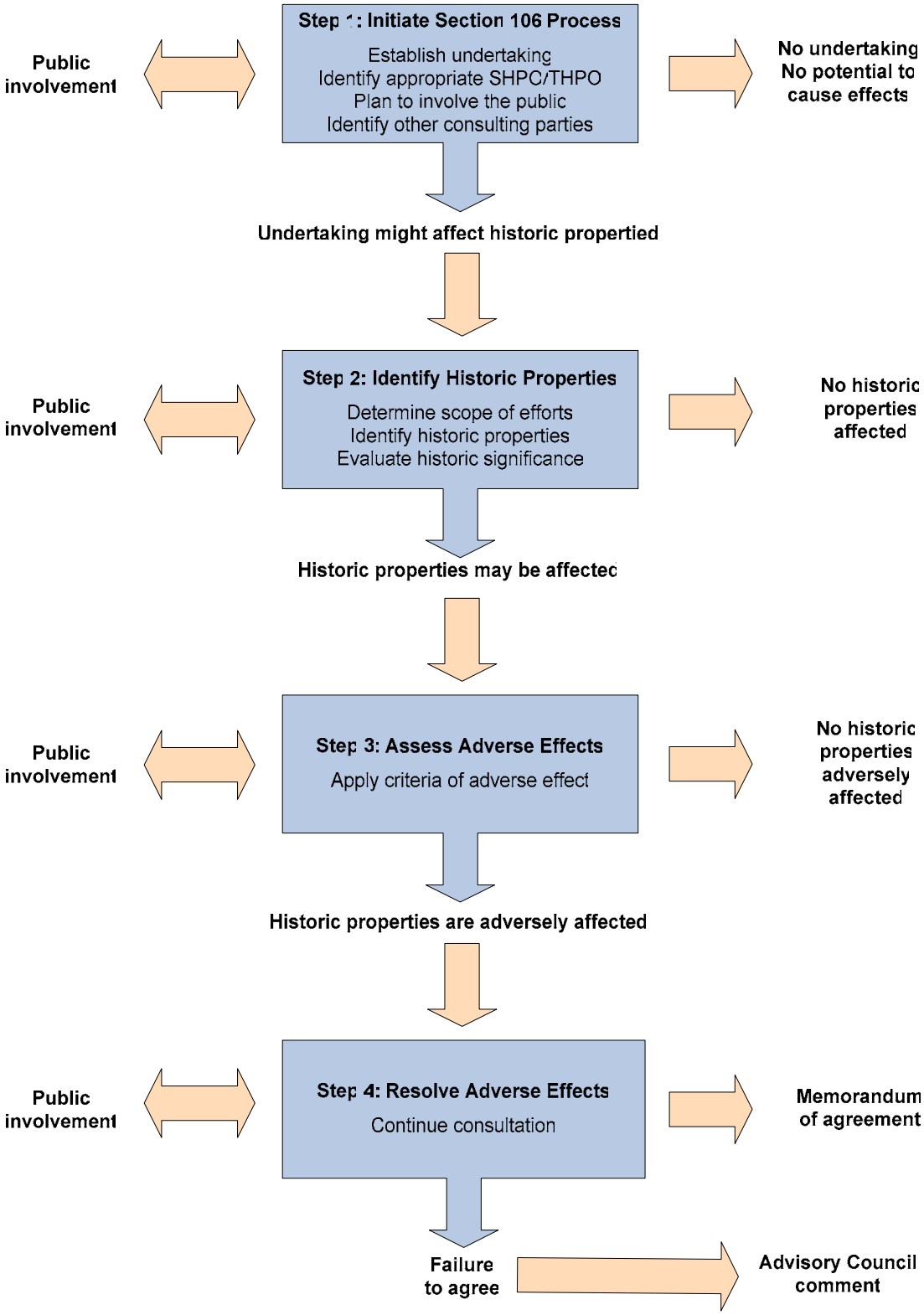

Figure 27. National Historic Preservation Act Section 106 review process.

Tailored Cultural Resource Review

In the past, INL has followed the Section 106 process on a project-by-project and property-by-property. This has been cumbersome and has the potential to result in costly project delays. Therefore, one of the main purposes of this plan is to tailor the Section 106 process to meet INL needs.

The cultural resource review process at INL is usually initiated through completion of an environmental checklist. Under the INL NEPA compliance program, every reasonably foreseeable DOE-ID-sponsored action on or off INL is preceded by preparation of an environmental checklist that assesses the potential impact of the proposed work for a wide variety of environmental issues and assigns a level of documentation (i.e., categorical exclusion, environmental assessment, or environmental impact statement) required for implementation. The list of threshold activities mandating cultural resource review, as listed above, is included in a management control procedure (MCP) entitled MCP-3480, "Environmental Instructions for Facilities, Processes, Materials, and Equipment." This MCP provides the direction and guidance for preparing environmental checklists at INL. Thus, even those INL activities that are categorically excluded from NEPA review are screened for their potential impact to cultural resources.

Activities and Properties Exempt From Cultural Resource Review

INL is an active scientific and engineering facility where thousands of work orders are processed each year.

To further streamline the Section 106 process, it is appropriate to define lists of activities and properties that are exempt from further cultural resource review. Thus, INL NEPA compliance personnel are also provided with a categorical list of property types that are not, themselves, considered significant or potentially eligible for nomination to the National Register under the National Historic Preservation Act. As such, actions that affect the aforementioned property types are exempt from review. These property types are listed in Table 1.

Most of the properties included on the exemption list are associated with the modern built environment at the Laboratory. While these resources may contribute to overall landscapes under different historic contexts and research designs, they are not likely to yield any additional information important in understanding those landscapes.

Generally, actions on property types 1 through 7 require no further NEPA or INL CRM Office consideration. (Certain exceptions apply to property type 1, as described in Table 1.) Proposed INL activities that may impact them can be completed without further cultural resource review. However, any proposed new construction of these property types or large-scale modification or demolition will be evaluated for potential effects to archaeological and American Indian resources.

The INL CRM Office is involved in projects that may impact property type 8 even though this property type is exempt from NHPA Section 106 cultural resource review. This is because information on the location and official status of archaeological resources is distributed for "official use only" and is available only through consultation with the INL CRM Office. As needed and on a case-by-case basis, such properties will be reevaluated for eligibility by INL CRM Office professionals. If it is determined that the status of those properties has changed, then compliance processes outlined in this plan will be invoked.

In addition to exempt property types, INL NEPA personnel are also provided with a list of some routine INL activities that do not pose a threat to cultural resources. Projects that involve activities on this list are exempt from further cultural resource review. However, they are still covered by procedures that require employees to stop work and contact the INL CRM Office if cultural materials are unexpectedly encountered during any activity. Activities exempt from cultural resource review at INL are listed in Table 2.

Table 1. Property types for which actions are exempt from review.

Property Type	Description
1. Post-1970 buildings, with exceptions	Activities or actions associated with buildings and structures constructed after 1970 are exempt from review, with the following exceptions: A property built after 1970 may be subject to review if it has been determined the exceptional historical importance of the property makes it eligible for inclusion on the National Register of Historic Places (e.g., LOFT buildings and structures).
2. Subsurface structures	These structures have minimal or no visible surface manifestations and include earthen and concrete-lined trenches, French drains, underground tanks, vaults, underground pipelines, sewer lines, and other structures that are typically located below ground and were never intended to be routinely accessed by people.
3. Storage tanks	These structures include surface and subsurface utility tanks used in routine facility operations. Associated concrete slab foundations, scaffolding, piping, or spill-management retaining walls are also included.
4. Wells and boreholes	These structures include characterization wells, monitoring wells, drinking water wells, industrial water wells, injection wells, and various types of test wells and boreholes. Wells associated with homesteading and other early historic uses of the area are not included.
5. Utility poles and towers	These structures include power lines, microwave towers, seismic data collection and transmission facilities, and other types of communication towers.
6. Utility structures	These structures provide housing or control of utility equipment or access to underground utility equipment, such as pump houses, electrical substations, boiler tanks, or equipment monitoring shacks.
7. Mobile trailers	These structures are used for temporary office space and/or storage.
8. Isolated finds	These archaeological resources consist of <10 artifacts and no architectural features. They are unlikely to yield any information beyond that collected during initial recording.

Exemption lists are subject to annual stakeholder review along with other aspects of the overall Cultural Resource Management Program. Despite the exemptions for certain activities and property types, the INL CRM Office conducts a large number of cultural resource reviews each year. Most of these reviews are prompted by one of the threshold criteria listed in the previous description. However, some reviews are associated with exempt activities and resources, particularly those that involve archaeological resources that are ineligible for nomination to the National Register or Isolated Finds. Appendix J provides a list of the cultural resource reviews conducted over the past three decades.

Cultural Resource Review Process

INL NEPA compliance personnel or project managers initiate the cultural resource review process as early as possible in the planning phase of a project.

Typically, the cultural resource review process is initiated during preparation of the environmental checklist, which provides the INL CRM Office with information on the nature and extent of the proposed activity. Exact dimensions and locations for all aspects of the proposed work (e.g., access roads, laydown areas, utility upgrade or removal, and proposed replacement or refinishing products) must be provided. INL CRM Office staff members use this information to determine if the proposed activity is an "undertaking" as defined in the National Historic Preservation Act and if so, to establish its "area of potential effect." The next review process steps for INL CRM Office staff are to determine whether the area in question has ever been surveyed for cultural resources, and if so, whether the survey met the minimum requirements described in Appendices C and D, whether there are any previously identified cultural resources in the proposed project area, and if the affected property is listed on an existing inventory.

Table 2. INL activities exempt from review.

Activity Type	Description
1. Emergency response	Activities declared by the U.S. president, a tribal government, or the governor of a state as necessary to safeguard human health and the environment during declared disasters, emergencies, or national security threats (including EBR-I).
2. Routine maintenance activities	Activities that include, but are not limited to, normal custodial services; electrical and plumbing installation or repair; repair of fire suppression systems, alarms, or communication systems; moving or assembly of interior furnishings; resurfacing of road, sidewalk, and parking areas; routine decontamination (through such activities as wiping down with rags, using strippable latex, and minor vacuuming, but excluding scabbing) of the surfaces of equipment, rooms, or other interior surfaces.
3. Replacement in kind	Replacement of fixtures or components of a property, such as matching paint with existing or similar paint color, refinishing materials with existing or similar colors, or replacing or installing carpeting with water-soluble glue. This exemption includes refinishing with products that have improved safety, environmental, or health considerations over the existing or original, as long as the color of the refinishing product is similar to or matches the existing original color.
4. Energy conservation measures	Activities that Include, but are not limited to, modifications to heating, ventilation, and air conditioning systems; insulation to roofs, crawl spaces, walls, and floors; and caulking and weather stripping that are not visible or do not significantly alter or detract from those qualities that make the property eligible for nomination to the National Register of Historic Places.
5. Security systems	Installation, maintenance, or repair of security systems, including computer security, detection, monitoring, surveillance, and alarm systems.
6. Safety systems	Installation, maintenance, and repair or modification of personnel safety systems and devices within the built environment, such as radiation monitoring devices; emergency exit lighting systems; protective additions to electrical equipment; improvements to walking and working surfaces; and installation of protective railings, guards, or shielding.
7. Asbestos abatement	Removing or fixing asbestos for safety and health concerns, including lagging, insulating, painting, pipe and duct work, and panel removal. None of these activities may cause structural modifications or alter character defining features. Asbestos abatement activities strictly associated with the DD&D of properties and that result in permanent, significant structural modification or alteration of the property are not included in this exemption.
8. Internal reconfiguration of active laboratories	Changes to the Internal configuration of active laboratories or other existing experimental or testing properties within the built environment to accommodate new experiments or tests.
9. Ground disturbance within fenced facility perimeters	Modifications to the ground surface within existing facilities (TAN, EBR-I, WRRTF, NRF, RTC, INTEC, RWMC, MFC) or within 50 ft of existing buildings in unfenced facility areas (CFA, ARA, BORAX). All activities under this exemption are subject to the INL Stop Work Authority (see Appendix A) should cultural resources be unexpectedly encountered at any time. This exemption does not apply to the CITRC facilities.

Because the INL CRM Office maintains a complete record of INL cultural resource investigations and comprehensive resource inventories, most of these questions can be answered by accessing the INL CRM Office files.

Other sources of information that may be utilized include early land survey records, county land ownership records, local libraries and information repositories, current and former employees, local historians, and researchers who previously conducted investigations at INL.

If these literature and records reviews indicate that the proposed project area and/or affected historic resource type is unsurveyed, has only been

partially surveyed, or was originally surveyed using methods less stringent than those described in Appendices C and D and in use today, INL project, program, and facility managers must provide support for completion of a cultural resource survey and evaluation. Early planning is crucial for timely completion of this work and implementation of the proposed project.

There are three possible outcomes at the end of the previously described scoping and identification efforts of the cultural resource review process. In broad outline, they are similar to those listed in the guidelines for implementation of Section 106 of the National Historic Preservation Act. This is intentional; they have been developed for compliance with this law. However, at INL there are resources (e.g., traditional American Indian gathering sites or sacred areas) that are not necessarily eligible for listing on the National Register. Although these resources may not be eligible, DOE-ID is obligated to protect them under requirements other than the NHPA, such as the Agreement-in-Principle and NEPA. The tailored process outlined in this plan is also used to assess effects to noneligible resources. The three possible outcomes are:

1. ***No Resources Affected.*** No cultural resources are present within the area of potential effect for the proposed undertaking; or cultural resources are present in the area, but the proposed undertaking will have no effect on the characteristics that make the resources culturally important.
2. ***No Adverse Effect.*** Cultural resources are present within the area of potential effect, and the proposed undertaking does not meet the criteria of an adverse effect, or the undertaking can be modified or conditions put in place to avoid the adverse effect.
3. ***Adverse Effect.*** Cultural resources are present within the area of potential effect, and the proposed undertaking may alter, directly or indirectly, any characteristic of a property that make it culturally important.

Because of the apparent and natural distinctions among the disparate types of cultural resources found at INL, customizing the NHPA Section 106 process and other requirements in a manner that benefits both DOE and the resources is complex. Therefore, while undertakings are reviewed for potential effects on cultural resources and any given project will only have one effect determination, tailored resource-specific strategies and procedures have been developed. Appendix C relates detailed procedures for identifying, evaluating, and consulting on historic and prehistoric archaeological sites. Appendix D describes customized management approaches and strategies for INL's unique built environment.

For each undertaking, DOE will consider potential effects on all types of cultural resources, and will consult stakeholders accordingly. If it is determined that no resources will be affected by an undertaking or that no adverse effect will occur, documentation of negative findings or avoidance or protective measures will be maintained in the INL cultural resource management archives. This information will be provided to the Idaho SHPO, stakeholders, and consulting parties in a general annual report. Quarterly reports will also be provided to the Shoshone-Bannock Tribes.

In those instances when the effects of an undertaking will be adverse, measures to minimize or mitigate the potential impact will be developed in consultation with the Idaho SHPO, Shoshone-Bannock Tribes, and other interested parties and stakeholders. However, for historic property types in the built environment that have been fully inventoried and evaluated, mitigation will follow strategies outlined in Appendix D.

SUMMARY

SUMMARY

DOE-ID recognizes their cultural resource stewardship responsibilities and the broad stakeholder interest in those resources. DOE-ID also recognizes their responsibility for the identification, evaluation, and protection of all INL cultural resources. These responsibilities are promulgated under three major federal laws (NHPA, ARPA, and NEPA) and their implementing regulations; State of Idaho statutes; and DOE-HQ policies, orders, and directives. To meet these obligations and to enhance overall INL mission goals, a dynamic and evolving Cultural Resource Management Program has been instituted at INL. Inventories of INL cultural resources are ongoing, as is public and employee awareness and education. Applicable laws and procedures are enforced and stakeholders are kept apprised of activities.

Through the INL Cultural Resource Management Program, DOE-ID and the INL CRM Office recognize and integrate the following diverse factors and issues that promote, guide, and require the protection and preservation of cultural resources:

- Complying with federal laws and regulations, state statutes, and DOE policies and orders concerning historic preservation and environmental protection, while supporting INL and DOE missions and programs
- Responding to the need for information and compliance demanded by a research and development facility such as INL, with its large land area, diverse resources, and varied programs, to meet short-term goals and anticipate and plan for long-term and future activities
- Interacting with non-INL offices and agencies that oversee and approve the management of INL cultural resources
- Interacting with Tribes and other stakeholders in a spirit of trust and openness to ensure balance and effectiveness in the management of INL cultural resources
- Meeting the popular and nearly universal appeal of prehistory and history by sharing and promoting the fascinating 12,000 year history represented at INL.

This Cultural Resource Management Plan is the INL CRM Office's primary mechanism for integrating cultural resource identification, evaluation, and protection into the INL mission and consolidating historic preservation activities into INL routine management and project-specific activities. As such, this plan addresses:

- Activities that assist in the revitalization of the Laboratory, while complying with federal, state, and local regulations and requirements for cultural resource protection
- Activities that meet the practical challenges to preserving INL's unique cultural landscape
- The need to facilitate and participate in INL programs and missions and the opportunity to conduct both cultural resource management and historical and scientific research through standardized practices, contexts, and research designs
- Specific future activities and long-term goals needed to ensure programmatic continuity.

This plan is intended to be a living document, flexible and responsive to change. It is designed to accommodate revision based on:

- New laws, regulations, procedures, and agreements
- INL CRM Office annual plans and reports, and input and suggestions from oversight groups, stakeholders, and other interested parties
- Changes in INL mission, management alignment, and physical structure and landscape
- Acquisition, through inventory and research, of new knowledge about INL cultural resources; application of this information to prediction, planning, and land-use on INL; and sharing of this information through such mechanisms as the compliance process, nominations to the National Register, technical and managerial reports, and popular and professional talks and presentations

- Continuing participation of American Indians in INL cultural resource management through participation in the Cultural Resource Working Group; solicitation of regular commentary on INL CRM Office plans, mitigation proposals, research and testing excavations, and treatment of sites and artifacts; and by working with American Indian authorities to obtain information about traditional land and resource use in order to protect and interpret areas and resources of concern.

As the dynamic INL Cultural Resource Management Program evolves, the overarching goal of the program will remain support of the overall INL mission through the protection of the valuable, irreplaceable cultural and historical resources present at INL.

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REFERENCES

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A—LEGAL BASIS

Appendix A

Legal Basis for Cultural Resource Management

Appendix A

Legal Basis for Cultural Resource Management

INTRODUCTION

The following is an outline of federal and state laws and regulations, executive orders, and DOE directives that guide cultural resource compliance and activities at INL.

All work at INL, whether research, operations, or maintenance, is controlled by the Integrated Safety Management (ISM) system. ISM dictates that all work be preplanned in accordance with specific standards and procedures, depending on the nature of the work.

LAWS, REGULATIONS, AND GUIDELINES

The federal and state laws, executive orders, regulations, and DOE directives summarized in the paragraphs to follow define and mandate the protection of cultural resources on federal land, provide guidelines for agencies and institutions in the implementation of these directives, and define the philosophical basis that underlies the INL Cultural Resource Management Program.

This summary is organized chronologically to give a sense of the development of national thought on historic protection. Several of the earlier acts have been strengthened or superseded by later legislation. Although all laws listed apply, those marked by an asterisk (*) are the leading and most relevant to INL "daily routine" and long-range planning by the INL CRM Office.

FEDERAL LAW

“Antiquities Act of 1906” (PL 59-209; 16 USC 431 - 433)

This law is the first federal statute passed to protect antiquities on federal land, protecting all historic and prehistoric cultural properties on federal lands without regard to minimum age. "Objects of antiquity" (including paleontological resources) are to be preserved, restored, maintained, and disturbed only under excavation permit. Artifacts and associated documents are to be cared for in public museums. A system is to be created to establish national historic monuments, and criminal penalties are to be assessed for violations.

Requirements of the Antiquities Act, including the permitting process, have been expanded, strengthened, and superseded by the ARPA. The ARPA definition of antiquities or cultural resources excludes paleontological remains.

“Historic Sites, Buildings, and Antiquities Act of 1935,” as amended (PL 74-292; 16 USC 461 - 467)

This act sets a national policy of preserving historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States. The authority to restore and maintain such sites is given to the secretary of the Interior, who is also designated to oversee a National Survey of Historic Sites and Buildings (now the National Register of Historic Places), the Historic Sites Survey, the Historic American Buildings Survey (HABS), and the Historic American Engineering Record (HAER)].

"The Reservoir Salvage Act of 1960," as amended (PL 86-523; 16 USC 469 - 469c)

This act mandates the salvage and preservation of historical and archaeological data that might otherwise be lost as a result of federal dam and reservoir construction. The act provides that up to one percent of funds appropriated for a project may be authorized to recover, preserve, and protect archaeological and historical data. The act was amended and broadened by the Archaeological and Historic Protection Act of 1974.

* "National Historic Preservation Act of 1966," as amended (PL 89-665; 16 USC 470, et seq.)

This act outlines the leadership role of the federal government in preservation of prehistoric and historic resources and promotes a policy of cooperation between federal agencies, tribes, other nations, states, and local governments. The act directs federal agencies to assume responsibility for the preservation of historic properties located on lands that they own or control (Section 110) and requires them to take into account the effects of their actions on those properties (Section 106). The act expands and formally establishes the National Register of Historic Places, providing a process by which historically important properties must be recognized and protected. The act also provides for the establishment and support of State Historic Preservation Offices, state historic preservation plans, and procedures for forming approved state and local government historic preservation programs. It creates the independent national Advisory Council on Historic Preservation to serve as counsel on historic preservation issues to the president, the Congress, and federal and state agencies. Further guidance for the National Historic Landmarks Program is also provided.

The following sections of the act are especially important to the relationship between cultural resource protection and activities on federal land.

Section 106—The Advisory Council on Historic Protection, created by NHPA, is responsible for implementing Section 106. This important section requires that federal agencies consider the potential impact of their activities on properties listed on or eligible for listing on the National Register and give the Advisory Council sufficient information and time to comment on federal activities. It provides a process to be followed for individual undertakings, emergency activities, and situations where historic properties are inadvertently discovered during an undertaking. Federal agencies can comply with Section 106 by following procedures for individual activities or by developing a programmatic agreement for large projects. The programmatic agreement is developed in consultation with the SHPO, the Advisory Council, American Indians, and other interested groups. Federal agencies can also develop their own substitute procedures (subject to approval by the Advisory Council) or follow a state review system approved by the Advisory Council and the state.

Basic compliance with Section 106 involves the following process:

1. **Initiation of the section 106 process.** In this initial step, federal agencies must establish the undertaking, identify the appropriate SHPO or Tribal Historic Preservation Office and other consulting parties, and make plans to involve the public. The federal agency official coordinates the steps of the section 106 process with the overall planning schedule for the undertaking and with any reviews required under other authorities such as the National Environmental Policy Act, the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, and the Archaeological Resources Protection Act.

2. **Identification of historic properties.** If the undertaking under consideration has the potential to impact historic properties, a second step in the Section 106 process is initiated. At this time, the federal agency must gather information and determine and document the area of potential effect for the undertaking. Next, steps must be taken to identify any historic properties within the area of potential effect and apply the National Register criteria to determine if any of the properties present are eligible for listing on the register.
3. **Assessment of adverse effects.** If eligible or potentially eligible historic properties are present within the area of potential effect for the undertaking, the federal agency must consult with the SHPO, impacted Tribal Historic Preservation Office(s), and any American Indian tribe that attaches religious and cultural significance to identified historic properties to determine if they will be adversely affected. The federal agency must also consider any views concerning such effects that have been provided by consulting parties and the public.
4. **Resolution of adverse effects.** If an adverse effect is determined as a result of the undertaking, the federal agency must continue consultation with the SHPO, impacted Tribal Historic Preservation Office(s), other consulting parties, and the public to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties. Continued consultation results in notification to the Advisory Council and development of a formal memorandum of agreement that outlines measures that will be taken to protect significant properties.

Section 110—This section of the act directs federal agencies to establish programs to locate, evaluate, and nominate eligible historic properties under their jurisdiction to the NRHP. The 1992 amendments strengthen the NHPA by requiring each federal agency to establish a historic preservation program to meet these goals. This requirement is important because it stresses that federal agencies must take an active role in the preservation and management of all significant cultural resources under their jurisdiction, not only those that happen to fall within the path of construction or modification projects.

Section 112—This section, added by the 1992 amendments to the NHPA, requires that federal agency and contractor individuals conducting historic preservation activities meet certain professional qualifications and that their activities under the NHPA meet certain standards.

Section 304 –This section directs federal agencies to "withhold from disclosure to the public, information relating to the location or character of historic resources whenever the head of the agency or the Secretary determines that the disclosure of such information may create a substantial risk of harm, theft, or destruction to such resources or to the area or place where such resources are located." This section is also used to protect sensitive information related to historic properties that is provided by traditional cultural leaders.

"Federal Collections Act of 1966" (PL 89-508)

Historic and prehistoric sites have been clearly defined as resources under the Antiquities Act, the ARPA, and the NHPA, and, as such, their deliberate or inadvertent destruction or disturbance constitutes damage to public property. The Federal Collections Act requires that agencies attempt to collect for damages arising from activities on federal land, including claims resulting from unauthorized or illegal activities that damage or destroy cultural resources; professional archaeological appraisal is required to translate site damage into monetary terms and evidentiary basis for court cases.

* “National Environmental Policy Act of 1969,” as amended (PL 91-190; 42 USC 4321 and 4331 - 4335)

This act outlines the federal policy of general environmental protection by requiring information gathering, planning, and assessment in advance of projects or actions that occur on federal land or are federally licensed or funded. It requires the use of natural and social sciences in planning and decision-making with regard to project impacts on the environment, and protective provisions are extended to important historic, cultural, and natural aspects of our national heritage. Federal agencies must prepare detailed statements (EISs, EAs) outlining the scope, environmental impacts of, and alternatives to the action planned, and allow for and consider public comments. The NHPA provides direction for integrating NEPA and NHPA Section 106 requirements. (Categorical exclusions under NEPA do not apply under the NHPA.)

"Protection and Enhancement of the Cultural Environment," 1971 (EO 11593)

This Executive Order formally designates the federal government as the leader in preserving, restoring, and maintaining the historic and cultural environment of the nation and gives federal agencies the responsibility for locating, inventorying, and nominating to the NRHP those sites that qualify. It also urges caution by federal agencies that, while this inventory and nomination process is going on, eligible properties are not transferred or altered. The primary philosophy and requirements of this order were incorporated into the NHPA 1980 amendments.

“Archaeological and Historic Preservation Act of 1974,” as amended (PL 93-291; 16 USC 469 - 469c)

This act, also known as the Archeological Recovery Act, amends the Reservoir Salvage Act by expanding its provisions to any federal ground-disturbing program or activity, or project requiring a federal license. It provides federal agencies with justification for expenditures to mitigate impacts on historic properties that contain scientific, prehistoric, historic, or archaeological data.

“American Folklife Preservation Act of 1976” (PL 94-201; 20 USC 2101 - 2107)

Within the Library of Congress, an American Folklife Center is established to preserve and present American folklife. It is a matter of concern to the federal government to encourage and support American folklife.

* “The American Indian Religious Freedom Act,” 1978 (PL 95-341; 42 USC 1996)

This act reaffirms American Indian religious freedom rights under the First Amendment and sets U.S. policy to protect and preserve the inherent and constitutional right of American Indians to believe, express, and exercise their traditional religions. The act prompts federal agencies to avoid interfering with access to sacred locations and traditional resources that are integral to the practice of native religions and directs them to consult with interested American Indian groups and leaders to develop and implement policies and procedures to aid in protection and preservation of cultural and spiritual traditions and sites. The act is not implemented by any regulations.

* “Archaeological Resources Protection Act,” 1979, as amended (PL 96-95; 16 USC 470aa et seq.)

This act establishes definitions, permit requirements, and criminal and civil penalties, among other provisions, to strengthen the basic tenets of the Antiquities Act of 1906. Felony-level penalties are established for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource more than 100 years of age and located on public lands or American Indian lands. The act also prohibits the sale, purchase, exchange, transportation, receipt, or offering of any archaeological resource obtained in violation of any provision of the act. Finally, the act fosters increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data.

* “Federal Cave Resources Protection Act of 1988” (PL 100-691)

The stated purpose of this act is "...to secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment, and benefit of all people...to foster increased cooperation and exchange of information between governmental authorities and those who utilize caves located on Federal lands for scientific, education, or recreational purposes..." The Federal Cave Resources Protection Act does not specifically address archaeological resources, but cave sites would benefit from this protection. Regulations have not yet been published.

* “Native American Grave Protection and Repatriation Act of 1990,” as amended (PL 101-601; 25 USC 3001 et seq.)

This act provides for the determination of custody, protection, and repatriation of American Indian human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony in existing federal collections and establishes criminal penalties for trafficking in human remains or cultural objects. Procedures are also provided for developing permits for excavation of such remains in consultation with appropriate American Indian representatives as well as for handling such remains when they are unexpectedly discovered during federal activities.

* “Indian Sacred Sites,” 1996 (EO 13007)

Under this broad Executive Order, federal agencies with land management responsibilities must, to the extent practicable and permitted by law, and in keeping with essential agency functions, accommodate access to and ceremonial use of sacred sites by American Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies must also maintain the confidentiality of sacred sites.

* “Consultation and Coordination with Indian Tribal Governments,” 2000 (EO 13175)

This Executive Order reaffirms the unique legal relationship between the United States and American Indian tribal governments. It stresses that federal agencies establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, strengthen the United States government-to-government relationships with American Indian tribes, and reduce the imposition of unfunded mandates upon the tribes.

"Preserve America," 2003 (EO 13287)

Federal agencies have a responsibility to provide a leadership role in preserving America's heritage. Federal agencies must manage the cultural resources under their jurisdiction as assets to their departments and missions while contributing to the vitality and economic well-being of the nation's communities and fostering a broader appreciation for the development of the United States and its underlying values. This Executive Order directs federal agencies to maximize efforts to integrate the policies, procedures, and practices of the National Historic Preservation Act. It directs them to promote the preservation of irreplaceable cultural resources by advancing the protection and continued use of their historic properties and pursuing partnerships with state and local governments, American Indian tribes, and the private sector.

REGULATIONS

Regulations are promulgated, adopted, and then published in the Code of Federal Regulations (CFR) to direct the implementation of laws. The following CFR citations are most pertinent to cultural resource management.

"Leases and Exchanges of Historic Property" (36 CFR 18)

This regulation governs the historic property leasing and exchange provisions of the National Historic Preservation Act.

"National Register of Historic Places" (36 CFR 60)

This regulation addresses nominations by federal, state, and local agencies as well as revision of nominations and removal of properties from the National Register.

* "Procedures for Approved State and Local Government Historic Preservation Programs" (36 CFR 61)

This regulation establishes standards for the approval and operation of state historic preservation programs, requires the State Historic Preservation Office to conduct statewide surveys of cultural properties, prepare and implement state preservation plans, and cooperate with federal agencies in Section 106 compliance. Professional qualification standards are also established, ensuring credibility in the practice of historic preservation at all levels and ensuring a consistent level of expertise is applied nationally to the identification, evaluation, registration, documentation, treatment, and interpretation of archaeological and other cultural resources.

* "Determinations of Eligibility for Inclusion in the National Register of Historic Places" (36 CFR 63)

This regulation sets forth a process and specific criteria for determining if properties are eligible for nomination to the National Register.

"National Historic Landmark Program" (36 CFR 65)

This regulation establishes criteria and procedures for identifying properties of national significance and designating them as national historic landmarks. Processes for revising landmark boundaries and/or removing landmark designations are also included.

"Standards for Rehabilitation" (36 CFR 67)

This regulation establishes procedures and standards whereby owners or holders of long-term leases for historic buildings may obtain certifications to gain federal tax credits for appropriate rehabilitation. Tax deductions for owners who donate interests in cultural resources for preservation purposes are also described.

* "Standards for the Treatment of Historic Properties" (36 CFR 68)

This regulation contains the standards for historic preservation projects including acquisition, protection, stabilization, preservation, rehabilitation, restoration, and reconstruction. These standards form the basis of the federal preservation program.

* "Curation of Federally Owned and Administered Archaeological Collections" (36 CFR 79)

This regulation provides standards and guidelines to be followed by federal agencies in preserving and providing adequate long-term curatorial services for archaeological collections of prehistoric and historic artifacts and associated records that are recovered under the NHPA, ARPA, and other antiquities laws.

* "Protection of Historic and Cultural Properties" (36 CFR 800)

This regulation includes guidelines of the Advisory Council on Historic Preservation to implement Sections 1 through 6 of the NHPA, as amended, and presidential directives issued pursuant thereto.

* "Preservation of American Antiquities" (43 CFR 3)

This regulation establishes procedures to be followed for permitting the excavation or collection of prehistoric and historic objects on federal lands.

* "Protection of Archaeological Resources Uniform and Supplemental Regulations" (43 CFR 7 Subparts A and B)

This regulation provides definitions, standards, and procedures for federal land managers to protect archaeological resources and provides further guidance on permitting procedures and penalties.

* "Native American Graves Protection and Repatriation Act: Final Rule" (43 CFR 10)

This regulation establishes a systematic process for determining the rights of lineal descendents, American Indian tribes, and Native Hawaiian organizations to certain American Indian human remains, funerary objects, sacred objects, and objects of cultural patrimony with which they are affiliated.

DEPARTMENT OF ENERGY DIRECTIVES

Cultural resource management direction and guidance specific to DOE is set forth in policy, departmental orders, and memoranda, as well as memoranda from individual field offices. DOE also issues periodic cultural resource management information briefings, including the following topics: National Historic Preservation Act, State and Tribal Historic Preservation Officers, Managing Cultural Resources That May Contain Residual Radioactive Material, Historic Preservation and the DOE

Historian, Archaeological Resources Protection Act, and Native American Graves Protection and Repatriation Act.

* “Department of Energy Management of Cultural Resources,” 2001 (DOE P 141.1)

The purpose of this policy is to ensure that DOE maintains a program that reflects the spirit and intent of cultural resource legal mandates. Two specific goals are:

“1. To ensure that Department of Energy (DOE) programs and field elements integrate cultural resources management into their missions and activities and

2. To raise the level of awareness within DOE concerning the importance of the Department’s cultural resource-related legal and trust responsibilities.”

* “American Indian Policy,” 1992, as revised in 1998 (DOE O 1230.2)

This order provides direction to all departmental officials, staff, and contractors regarding fulfillment of trust obligations and other responsibilities arising from departmental actions that may potentially impact American Indian and Alaska Native traditional, cultural, and religious values and practices; natural or cultural resources; and treaty and other federally recognized and reserved rights.

* “Management of Cultural Resources at Department of Energy Facilities," 1990, as revised in 2001 (DOE Memorandum)

The purpose of this memorandum is to inform all DOE facilities and programs of the requirements for complying with the various executive orders, statutes, and implementing regulations governing the management of cultural resources. Included are basic definitions for cultural resources and outlines of consultation requirements with regard to cultural resource compliance and cultural resource preservation planning as required by NHPA. This memorandum also orders the development of facility- and program-specific cultural resource management plans.

“Managing Cultural Resources that may Contain Residual Radioactive Material,” August 1999 (DOE Information Brief)

The issue of radiologically contaminated American Indian human remains and other artifacts impacts relatively few federal agencies. However, as a result of historical operations in support of our national defense and other mission-essential activities, this issue is of particular importance to DOE. Although no radiologically contaminated remains have been identified, if such an event were to occur, the processes set forth in DOE Order 5440.5, “Radiation Protection of the Public and the Environment,” should be used to ensure radiological protection responsibilities are accomplished.

* "Management of Cultural Resources on the INEL," October 12, 1990 (DOE-ID Management Directive)

This directive from A. A. Pitrolo, manager, DOE-ID, represents DOE-ID’s response to DOE memorandum, "Management of Cultural Resources at Department of Energy Facilities." The Idaho-specific memorandum initiates development and implementation of an INL cultural resource management plan and commits to rigorous compliance with cultural resource legislation.

STATE OF IDAHO

On the INL site, as on other federal reserves, federal statutes supersede existing state legislation pertaining to cultural resources. However, both sets of statues are complementary and state acts have corollaries at the federal level.

"Idaho Historic Preservation Act," Idaho Code, Chapter 41 (I.C. 67:4113-4129)

This act establishes protection of archaeological and vertebrate paleontological resources on public (state) lands in Idaho. It provides for the permitting of qualified individuals or institutions to excavate, and establishes penalties for violation of the code. It is superseded by federal law on the INL site.

"Burial Act," Idaho Code, Chapter 70 (I.C. 18:7027-7028)

Desecration of human burials on public (state) lands is prohibited and penalties are established for unlawful removal of human remains.

"Protection of Graves," Idaho Code, Chapter 5, Title 27

This law defines permitted activities and establishes guidelines for the legal removal of human remains from Idaho gravesites by qualified archaeologists or law enforcement personnel. Consultation with and written permission of the State Historical Society director and the appropriate tribe is required in cases involving American Indian burials. Human remains and associated items from these gravesites must be reinterred in an area approved by the tribe.

"Idaho Cave Protection Act," Idaho Code, Chapter 70, Title 18, Section 7035

It is unlawful to damage caves or their features or contents through vandalism or removal; permission is possible for legitimate entry and collection. The act applies to federal, state, or private caves or their resources. It includes cave features, plants and animals, and archaeological materials. Violation of the act is considered a trespass and malicious injury to property misdemeanor.

INL IMPLEMENTING DOCUMENTS

The INL environmental philosophy and program is described in the program description document PDD-1012, "Environmental Management System." All work done on INL is controlled by specific company procedures, standards, and guidelines. Work preplanning (depending on the nature of the work) is directed by documents such as standard STD-101, "Integrated Work Control Process," and by management control procedures MCP-3562, "Hazard Identification, Analysis and Control of Operational Activities," or MCP-3571, "Independent Hazard Review." While work is being performed, numerous procedures are adhered to, with MCP-553, "Stop Work Authority," as one of primary importance to cultural resources.

PDD-1012, "Environmental Management System"

The Environmental Management System at INL is designed to integrate environmental protection, environmental compliance, pollution prevention, and continual improvement into work planning and execution throughout all work areas as a function of the Integrated Safety Management System. The Environmental Management System applies to all company organizations that implement environmental

requirements or that have activities, products, or services that have the potential to impact the air, water, land, natural resources, historic or cultural resources, vegetation, wildlife, or surrounding population. Company line management is responsible for communicating relevant environmental requirements and environmental hazards to employees and subcontractors through appropriate company documents.

* STD-101, "Integrated Work Control Process"

The Integrated Work Control Process is the method by which the Integrated Safety Management System, enhanced work planning, and Voluntary Protection Program are implemented for maintenance and construction work activities. STD-101 provides a single process by which all maintenance and construction work on the Idaho National Laboratory is performed, and by which all work is screened for hazards. References are provided for other regulatory requirements (such as environmental compliance) applicable to work performed at INL.

* MCP-3562, "Hazard Identification, Analysis and Control of Operational Activities"

This MCP describes the process for performing hazard identification, analysis, and control for operational activities (all non-maintenance and non-construction activities). This procedure provides the method by which the following functions of the Integrated Safety Management System are achieved: identify the hazards, analyze the hazards, identify standards and requirements, identify controls to prevent or mitigate hazards, and establish safety controls. An exhaustive list of potential work tasks is contained in this document. This list facilitates which department or subject matter expert must be contacted prior to each specific task or activity. Operational activities requiring environmental checklists are identified within this document, and departmental contacts given.

* MCP-3571, "Independent Hazard Review"

This procedure describes the activities necessary to ensure that research and development work is conducted in accordance with all applicable environmental, safety, health, and quality requirements.

* MCP-553, "Stop Work Authority"

Every INL employee is granted the authority to stop work if any unsafe condition, at risk behavior, or environmental or quality deficiency is noted. In practical terms, if cultural resources are noted in the course of work, the employee should stop work and contact the INL CRM Office.

MCP-2725, "Fieldwork"

This procedure outlines activities necessary to conduct INL fieldwork in a safe manner.

* MCP-3480, "Environmental Instructions for Facilities, Processes, Materials and Equipment"

This MCP provides instructions for performing environmental planning, compliance, and protection activities during the course of conducting work. It is used in conjunction with other appropriate instructions (e.g., operations, maintenance, construction, and safety and health procedures), as well as environmental permits.

MCP-2860, "Building/Facility Transition"

This procedure implements the standardized requirements for transitioning a DOE-ID facility from active to inactive status or vice versa. It defines responsibilities, processes, and definitions for determining building characteristics such as size, condition, and contamination levels. The product from this activity is a "Facility Condition Report" that is deployed to guide transition. Program managers are specifically directed to "Determine if any of the process equipment remaining in the facility has historical significance, and if so, who will remove it." Finally, MCP-2860 directs program managers to consider long-term stewardship matters including "….the protection of cultural and ecological resources within areas of stewardship responsibility."

MCP-2477, "Utilization and Disposal of Real Property"

MCP-2477 describes the process whereby DOE-ID real property is transferred, donated, sold, or destroyed. Any of the first three options can include either arrangements with either internal (DOE) or external (other agencies, private parties, or organizations) entities.

Appendix B

American Indian Interests:
DOE Policy and Regulatory Guidance

Appendix B

American Indian Interests: DOE Policy and Regulatory Guidance

INTRODUCTION

American Indians tribes have several concerns centered around protection and renewal of their cultures:

- Treaty rights and tribal sovereignty
- Contemporary political and social rights, and economic viability
- Preservation of language and customs
- Freedom to practice native religions and to protect and have access to religious and traditional sites
- Protection of archaeological sites, treatment of human burials and associated artifacts, and repatriation of human skeletons and sacred objects.

DOE-ID has addressed these concerns by:

- Adhering to the U.S. Department of Energy American Indian and Alaska Native Tribal Government Policy (see Attachment 1)
- Entering into an AIP Between The Shoshone-Bannock Tribes and the United States Department Of Energy (see Attachment 2)
- Developing a communications protocol for undertakings involving INL American Indian cultural resources (see Attachment 3)
- Developing an MOA Between the United States Department of Energy, Idaho Operations Office and the Shoshone-Bannock Tribes (Middle Butte Cave Agreement) (see Attachment 4).

SUMMARY OF THE U.S. DEPARTMENT OF ENERGY AMERICAN INDIAN AND ALASKA NATIVE TRIBAL GOVERNMENT POLICY

The U.S. DOE American Indian and Alaska Native Tribal Government Policy (see Attachment 1) outlines the principles to be followed by DOE in its interaction with federally-recognized American Indian tribes. This policy is based on federal policy, treaties, federal law and DOE's responsibilities as a federal agency to ensure that tribal rights and interests are identified and considered in pertinent decision-making processes. Under this policy, DOE will:

1. Recognize the federal trust relationship and fulfill its trust responsibilities to American Indian and Alaska Native nations.
2. Recognize and commit to a government-to-government relationship and institute appropriate protocols and procedures for program and policy implementation.
3. Establish mechanisms for outreach, notice, and consultation, and ensure integration of American Indian nations into decision-making processes.
4. Comply with applicable federal cultural resource protection and other laws and Executive Orders to assist in the preservation and protection of historic and cultural sites and traditional religious practices.

5. Initiate a coordinated effort for technical assistance, business and economic self-determination development opportunities, education, and training programs.
6. Ensure that the secretary of Energy conducts an annual Tribal Leaders summit for performance review of policy implementation and issue resolution.
7. Work with other federal agencies and state agencies that have associated responsibilities and relationships to their respective organizations as they relate to tribal matters.

SUMMARY OF THE AGREEMENT IN PRINCIPLE BETWEEN THE SHOSHONE-BANNOCK TRIBES AND THE UNITED STATES DEPARTMENT OF ENERGY

The AIP (see Attachment 2) specifically defines a working relationship between the Shoshone-Bannock Tribes and DOE-ID. The AIP reflects an understanding and commitment between the Tribes and DOE to facilitate the Tribes' greater level of assurance that activities being conducted at INL address Tribal interests in DOE-administered programs and protect the health, safety, environment, and cultural resources of the Tribes. The AIP states the roles that the Tribes and DOE will play in the following areas:

- Environmental management
- NEPA compliance
- Environmental monitoring
- Release reporting requirements for DOE
- Emergency management
- Protection of cultural resources
- Risk assessment or health studies
- Tribal self-sufficiency.

Protection of Cultural Resources as Stipulated in the AIP

The AIP recognizes that protection of cultural resources, access to sacred sites and sites of traditional use, and repatriation of American Indian human remains and cultural items are of paramount importance to the Tribes and DOE. As stewards of these important resources at INL, DOE-ID further agrees to continue coordination and consultation with the Tribes in their cultural resource compliance responsibilities and in the continued development of a relationship of trust and openness with the Tribes. Protection of cultural resources entails:

1. **Definition of cultural resources.** DOE understands the Tribes' position that cultural resources include, but are not limited to, natural resources, sacred sites, traditional cultural properties, camps, burial areas and associated funerary objects, and other items of cultural patrimony to the Tribes. DOE further understands that objects that are of religious, traditional, or historic importance to the Tribes include, but are not limited to, traditional plants, wildlife, and landscapes.
2. **Tribal involvement.** DOE will provide access to INL cultural resource investigations and opportunities for tribal participation in project planning and determination of effects (NHPA Section 106). DOE will also provide reasonable opportunity and adequate timeframes for tribal comment and response to specific undertakings. The Tribes will provide timely response to DOE, within 30 days or as otherwise agreed.

3. **Consultation.** DOE and the Tribes will use the communications protocol (see Attachment 3) as a guide and a starting point, not as a substitute, for achieving the consultation requirements of applicable federal laws, regulations, orders, and policies.

4. **Management of discovered human remains and cultural artifacts.** In the event that human remains or burial sites are inadvertently discovered, accidentally exposed, or potentially threatened, the Tribes will be contacted immediately and consultation, as outlined in the communications protocol will be initiated (see Attachment 3).

   DOE agrees that Tribal representatives will be permitted to view any discoveries of remains and cultural artifacts, will be authorized to do site inspections of any archaeological discovery or excavation, and will be permitted to be present during any archaeological excavation, survey, study, or testing at INL.

5. **Tribal access for cultural and religious purposes.** The 1994 memorandum of understanding (MOU) between the Tribes and DOE regarding access to the Middle Butte area will continue to be in effect (see Attachment 4). Access to other INL undeveloped areas for cultural or religious purposes will be considered and accommodated on a case-by-case basis.

6. **Protection of information.** The Tribes, DOE, and DOE contractors will not release or allow the release of any information pertaining to the exact location of any American Indian burial sites, archaeological sites, or significant sites identified as American Indian to the public, unless required by law or legal authority.

   DOE will coordinate with the Tribes prior to approving for external publication any documents that have been prepared as a result of the study, analysis, research, or other work done under the direction and control of DOE on or in relation to American Indian human remains or archaeological resources at INL. In the event that the Tribes disagree with portrayal of tribal cultural matters in a DOE-controlled publication, DOE will provide for inclusion of a tribal historical position in such publication.

COMMUNICATIONS PROTOCOL FOR UNDERTAKINGS INVOLVING AMERICAN INDIAN CULTURAL RESOURCES AT INL

DOE-ID recognizes and appreciates the need to interact and consult directly with the Shoshone-Bannock Tribes regarding the management of cultural resources at INL. A communications protocol (see Attachment 3) has been developed cooperatively to accomplish effective and timely communication and to enhance the formal and informal interaction and consultation required to serve the needs of DOE, contractor, and tribal entities who have a stake in the issues. The communications protocol does not supersede or replace any other provisions for consultation with the Tribes or other regulatory agencies under applicable federal laws. Rather, it is intended to supplement them and to provide clarification on how and when communication, interaction, and consultation will occur between DOE-ID and the Tribes regarding INL cultural resources.

Interactions and Consultations

Differing levels of activity involving cultural resources at INL require a flexible approach to communication, interaction, and consultation. For this purpose, three levels of exchange between DOE and the Tribes have been developed, with each level differing according to degree of formality and the personnel involved. Briefly, the three levels of exchange are:

1. **Level I: Routine technical communication.** This is the most informal level and often involves the direct interaction of DOE-ID or INL CRM Office personnel with personnel from the Heritage Tribal

Office (HETO; formerly Tribal CRM Office). Routine communications would usually occur on a daily or weekly basis as needed, and involve telephone calls, electronic mail messages, working meetings, etc. Another mechanism for routine technical interaction is the regular meeting of the INL CRWG, consisting of Tribal, federal, and contractor cultural resource management technical personnel.

2. **Level II: Intermediate interaction.** The second level of interaction is actually a formal consultation, with the technical cultural resource management personnel for DOE-ID, the Tribes, and the INL CRM Office acting as the designees of their respective agencies. This level is entered into when it is determined (either through Level I interaction or other means) that an undertaking has the potential to affect an American Indian cultural resource. This level is also the level at which formal notification of the Idaho SHPO is made for the purposes of conducting a NHPA Section 106 review of undertaking.
3. **Level III: Government-to-government consultation.** This is the most formal level of consultation and involves communication between the Tribal chairperson and the manager of DOE-ID. It is utilized when an undertaking will have an "adverse effect" upon an American Indian resource and mitigation needs to be performed, or when American Indian human remains or other cultural items, as defined by NAGPRA, are inadvertently discovered.

MIDDLE BUTTE CAVE AGREEMENT

In the "Middle Butte Cave Agreement," formerly known as "Memorandum of Agreement Between United States Department of Energy, Idaho Operations Office and the Shoshone-Bannock Tribes," (see Attachment 4), DOE-ID recognizes that certain INL areas have cultural and religious significance to the Tribes. This agreement provides tribal access to the Middle Butte area and other areas that may be identified for access in the future for the performance of tribal sacred or religious ceremonies or other cultural or educational activities.

TRADITIONAL CULTURAL PLACES

According to the 1990 National Register Bulletin 38, "Guidelines for Evaluating and Documenting Traditional Cultural Properties," a traditional cultural property is a place that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that are rooted in that community's history, and are important in maintaining the continuing cultural identity of the community. Non-American Indian places can also be traditional cultural properties. An urban neighborhood that has cultural value—for example, a Chinatown—or a rural community like the traditional communities of the Amish, or a cowboy community in the west can also be eligible for the National Register as a traditional cultural property.

Shoshone-Bannock tribal homelands, including the Fort Hall Indian Reservation, aboriginal territories, and ceded areas, are acknowledged to be the "cultural, political, and economic center of the Tribes and are essential to their survival." INL is located on federal land that is recognized as part of this aboriginal territory and contains cultural resources important to the Tribes. Protection of these cultural resources, access to sacred sites, sites of traditional use, and repatriation of American Indian human remains and cultural items are of paramount importance to the Tribes and DOE (Agreement In Principle Between the Shoshone-Bannock Tribes and the United States Department of Energy, August 6, 1998, p. 8).

DOE-ID recognizes its trust responsibility to prudently manage the natural and cultural resources within its jurisdiction in consultation with the Tribes. Towards that means and for the purposes of this CRMP, the AIP and the communications protocol for undertakings involving American Indian cultural resources at INL will be used to address procedures for all cultural resource issues including, but not

limited to, traditional cultural places, sacred sites, and AIRFA and NAGPRA issues. The aforementioned guidelines and policies recognize the importance of procedural flexibility, earliest possible involvement, meaningful and culturally appropriate consultation, early planning consideration, respect for religious and other cultural beliefs, and the legitimacy of confidentiality. DOE understands that, based on confidentiality concerns, it may be inappropriate for the Shoshone-Bannock Tribes to provide maps, descriptions, or lists of known sacred sites or traditional cultural places to non-tribal members.

Attachment 1

U.S. Department of Energy
American Indian and Alaska Native Tribal Government Policy

U.S. DEPARTMENT OF ENERGY AMERICAN INDIAN AND ALASKA NATIVE TRIBAL GOVERNMENT POLICY

BACKGROUND

Indian nations are sovereign with unique political and legal standing derived from a longstanding relationship as stated in the Purpose Section of this document. The Indian nations retain an inherent right to self-governmental authority, and therefore, Federal activities affecting self-governance rights and impacting upon trust resources require policy implementation in a knowledgeable and sensitive manner protective of tribal sovereignty and trust resources. DOE released its Indian Policy in 1992 and subsequently issued DOE Order 1230.2 that established the responsibilities and roles of DOE management in carrying out its policy. At the request of Indian nations in 1998, the Secretary of Energy agreed to revise the 1992 American Indian Policy and effect comprehensive implementation. This revision was based in part on comments from Indian nations and their leadership and replaces the 1992 Policy that is part of the 1992 Order.

DEFINITIONS

Indian Nation means any American Indian or Alaska Native Tribe, Band, nation, Pueblo, or other organized group or community, including any Alaska Native village [as defined or established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.)], which is acknowledged by the Federal government to constitute a tribe with a government to government relationship with the United States and eligible for the programs, services, and other relationships established by the United States for indigenous peoples because of their status as American Indian and Alaska Native tribes, Bands, nations, Pueblos or communities.

American Indian and Alaska Native Tribal Government means the recognized government of an Indian nation and any affiliated or component band government of such nation that has been determined eligible for specific services by Congress or officially recognized in 25 CFR Part 83, “Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs,” as printed in the Federal Register.

Trust Responsibility includes, but is not limited to: promotion and protection of tribal treaty rights, federally recognized reserved rights, and other federally recognized interests of the beneficiary American Indian and Alaska Native nations; determining, documenting, notifying, and interacting with tribal governments with regard to the impact of Departmental programs, policies, and regulations to protect American Indian and Alaska Native traditional and cultural lifeways, natural resources, treaty and other federally recognized and reserved rights.

Consultation includes, but is not limited to: prior to taking any action with potential impact upon American Indian and Alaska Native nations, providing for mutually agreed protocols for timely communication, coordination, cooperation, and collaboration to determine the impact on traditional and cultural lifeways, natural resources, treaty and other federally reserved rights involving appropriate tribal officials and representatives throughout the decision-making process, including final decision-making and action implementation as allowed by law, consistent with a government to government relationship.

Cultural Resources include, but are not limited to: archaeological materials (artifacts) and sites dating the to prehistoric, historic, and ethnohistoric periods that are located on the ground surface or are buried beneath it; natural resources, sacred objects, and sacred sites that have importance for American Indian

and Alaska Native peoples; resources that the American Indian and Alaska Native nations regard as supportive to their cultural and traditional lifeways.

Treaty and Trust Resources and Resource Interests include, but are not limited to: natural and other resources specified and implicit in treaties statutes, and agreements, or lands or other resources held in trust by the United States for the benefit of the tribes or individual Indian beneficiaries, including land, water, timber, fish, plants, animals, and minerals. In many instances, Indian nations retain hunting, fishing, and gathering rights, and access to these areas and resources on lands or waters that are outside of tribally-owned lands.

POLICY PRINCIPLES

I. DOE RECOGNIZES THE FEDERAL TRUST RELATIONSHIP AND WILL FULFILL ITS TRUST RESPONSIBILITIES TO AMERICAN INDIAN AND ALASKA NATIVE NATIONS.

The DOE will be diligent in fulfilling its federal trust obligations to American Indian and Alaska Native governments in policy implementation and program management activities. The DOE will pursue actions that uphold treaty and other federally recognized and reserved rights of the Indian nations and peoples. The Department recognizes that some Tribes have treaty-protected and other federally recognized rights to resources and resource interests located within reservation boundaries, aboriginal territories, and will, to the extent of its authority, protect and promote these treaty and trust resources and resources interests, and related concerns in these areas.

When internal policies, regulations, and statutes, or other barriers prohibit or hinder the DOE trust protection actions or participation in eligible program initiatives, the Secretary will direct the agency to seek corrective protection measures, and tribal government program inclusion.

The DOE is committed to protecting treaty compliance and trust interests of Indian nations during interactions with state and local governments and other stakeholders with regard to DOE actions impacting upon American Indian and Alaska Native governments and peoples. The Department will inform and educate stat and local governmental entities and other stakeholders about the DOE's role and responsibilities regarding its trust relationship with Indian nations.

The DOE will seek to determine the impacts of Departmental-proposed legislation upon Indian nations, in extensive consultation and collaboration with tribes. The Secretary will implement this notice and consultation effort consistent with the intent and purpose of this policy.

II. THE DEPARTMENT RECOGNIZES AND COMMITS TO A GOVERNMENT TO GOVERNMENT RELATIONSHIP AND WILL INSTITUTE APPROPRIATE PROTOCOLS AND PROCEDURES FOR PROGRAM AND POLICY IMPLEMENTATION

The DOE recognizes Tribal governments as sovereign entities with primary authority and responsibility for the protection of the health, safety, and welfare of their citizens. The Department will recognize the right of each Indian nation to set its own priorities and goals in developing, protecting, and managing its natural and cultural resources. This recognition includes separate and distinct authorities that are independent of state governments.

The Department, in keeping with the principle of self-governance, recognizes American Indian and Alaska Native governments as necessary and appropriate non-Federal parties in the federal decision-making process regarding actions potentially impacting Indian country energy resources, environments, and the health and welfare of the cities of Indian nations. The DOE will establish protocols for communication between tribal leaders, the Secretary, and federal officials. The DOE will ensure consistent application of program and policy implementation with Indian nations through periodic review,

assessment, and collaboration with tribal representatives to audit protocol systems. Principles of consistent policy implementation will be tempered with consideration of the diverse cultures and ideals of the Indian nations.

III. THE DEPARTMENT WILL ESTABLISH MECHANISMS FOR OUTREACH, NOTICE, AND CONSULTATION, AND ENSURE INTEGRATION OF INDIAN NATIONS INTO DECISION-MAKING PROCESSES.

To ensure protection and exercise of tribal treaty and other federally recognized rights, the DOE will implement a proactive outreach effort of notice and consultation regarding current and proposed actions affecting tribes, including appropriate fiscal year budget matters. This effort will include timely notice to all potentially impacted Indian nations in the early planning stages of the decision-making process, including predraft consultation, in the development of regulatory policies on matters that significantly or uniquely affect their communities. As appropriate, the DOE will provide delivery of technical and financial assistance related to DOE-initiated regulatory policy, identifying programmatic impacts and determining the significance of the impact. The DOE will continue to conduct a dialogue with Indian nations for long and short term decision-making when DOE actions impact Indian nations. The DOE will comply with the consultation and Coordination With Indian Tribal Governments Executive Order 13084, May 14, 1998, and the Government to Government Relations with Native American Tribal Governments Executive Memorandum, April 29, 1994.

The DOE will implement permanent workshops and programs for field and headquarters staff on American Indian and Alaska Native cultural awareness and tribal governance.

Due to the nature of the trust responsibility to tribal governments, performance reviews of consultation activities will be conducted, in collaboration with tribal governments.

IV. DEPARTMENT-WIDE COMPLIANCE WITH APPLICABLE FEDERAL CULTURAL RESOURCE PROTECTION AND OTHER LAWS AND EXECUTIVE ORDERS WILL ASSIST IN PRESERVATION AND PROTECTION OF HISTORIC AND CULTURAL SITES AND TRADITIONAL RELIGIOUS PRACTICES.

The Department will consult with any American Indian and Alaska Native tribal government with regard to any property to which that tribe attaches religious or cultural importance which might be affected by a DOE action. With regard to actions by DOE in areas not under DOE control or when an action of another federal agency takes place on DOE land, DOE will consult with tribes in accordance with this Policy. Such consultation will include tribal involvement in identifying and evaluating cultural resources including traditional cultural properties; facilitating tribal involvement in determining and managing adverse effects; collaboration in the development and signing of memoranda of understanding with DOE, when appropriate.

Departmental consultation will include the prompt exchange of information regarding identification, evaluation, and protection of cultural resources. To the extend allowed by law, consultation will defer to tribal policies on confidentiality and management of cultural resources. Consultation will include matters regarding location and management methodology; repatriation and other disposition of objects and human remains; access to sacred areas and traditional resources located on DOE lands, consistent with safety and national security considerations; and cultural resources impact assessment of potential loss to tribal communities.

The DOE will comply with current and forthcoming cultural resource protection laws and Executive Orders including Native American Graves Protection and Repatriation Act; Archaeological Resources Protection Act; American Indian Religious Freedom Act; National Historic Preservation Act; National

Environmental Policy Act, Freedom of Information Act; Privacy Act; Indian Sacred Sites Executive Order 13007; May 24, 1996, Consultation and Coordination with Indian Tribal Governments Executive Order 13084, May 14, 1998; Government to Government Relations with Native American Tribal Governments Executive Memorandum, April 29, 1994; Tribal Colleges and Universities Executive Order 13021; Executive Order 12898 on Environmental Justice.

V. THE DEPARTMENT WILL INITIATE A COORDINATED DEPARTMENT-WIDE EFFORT FOR TECHNICAL ASSISTANCE, BUSINESS AND ECONOMIC SELF-DETERMINATION DEVELOPMENT OPPORTUNITIES, EDUCATION, AND TRAINING PROGRAMS.

The Department will implement a consistent national outreach and communication effort to inform tribal leaders and tribal program officials about access to internships and scholarships; availability of technical assistance and training opportunities; conventional and renewable energy development programs; related tribal business and individual member business enterprise, service-provider, and contracting opportunities.

The DOE recognizes the need for direct funding and technical assistance from applicable DOE-sponsored programs within the Department and the national Laboratories which deal with regulation, energy planning, and development of energy resources on tribal lands and Alaska Native site-controlled and trust lands.

The Department will provide information and outreach programs to tribal and individual member businesses on opportunities to participate, compete, and participate in renewable and conventional energy generation, transmission, distribution, marketing and energy services, grants, and contracts. The Department will assist in development of balanced, sustainable, and viable American Indian and Alaska Native communities by continuing to implement Title XXVI, Indian Energy Resources, of the national Energy Policy Act that provides for the promotion of resource development and energy integration.

The Secretary will create programs that encourage and support the establishment of federal, private, tribal and intertribal partnerships. The Department will provide assistance and coordinate with other federal agencies in the development of energy-related projects.

VI. THE SECRETARY OF ENERGY WILL CONDUCT AN ANNUAL TRIBAL LEADERS SUMMIT FOR PERFORMANCE REVIEW OF POLICY IMPLEMENTATION AND ISSUE RESOLUTION.

The Secretary will engage tribal leaders in an annual dialogue, to discuss the Department's implementation of the American Indian and Alaska Native Policy. The dialogue will provide an opportunity for tribal leaders to assess policy implementation, program delivery, and discuss outreach and communication efforts, and other issues.

VII. THE DEPARTMENT WILL WORK WITH OTHER FEDERAL AGENCIES, AND STATE AGENCIES, THAT HAVE RELATED RESPONSIBILITIES AND RELATIONSHIPS TO OUR RESPECTIVE ORGANIZATIONS AS THEY RELATE TO TRIBAL MATTERS.

The DOE will seek and promote cooperation with other agencies that have related responsibilities. The Department's mission encompasses many complex issues where cooperation and mutual consideration among governments (federal, state, tribal, and local) are essential. The DOE will encourage early communication and cooperation among all governmental and non-federal parties regarding actions potentially affecting Indian nations. The DOE will promote interagency and interdepartmental coordination and cooperation to assist tribal governments in resolving issues requiring mutual effort.